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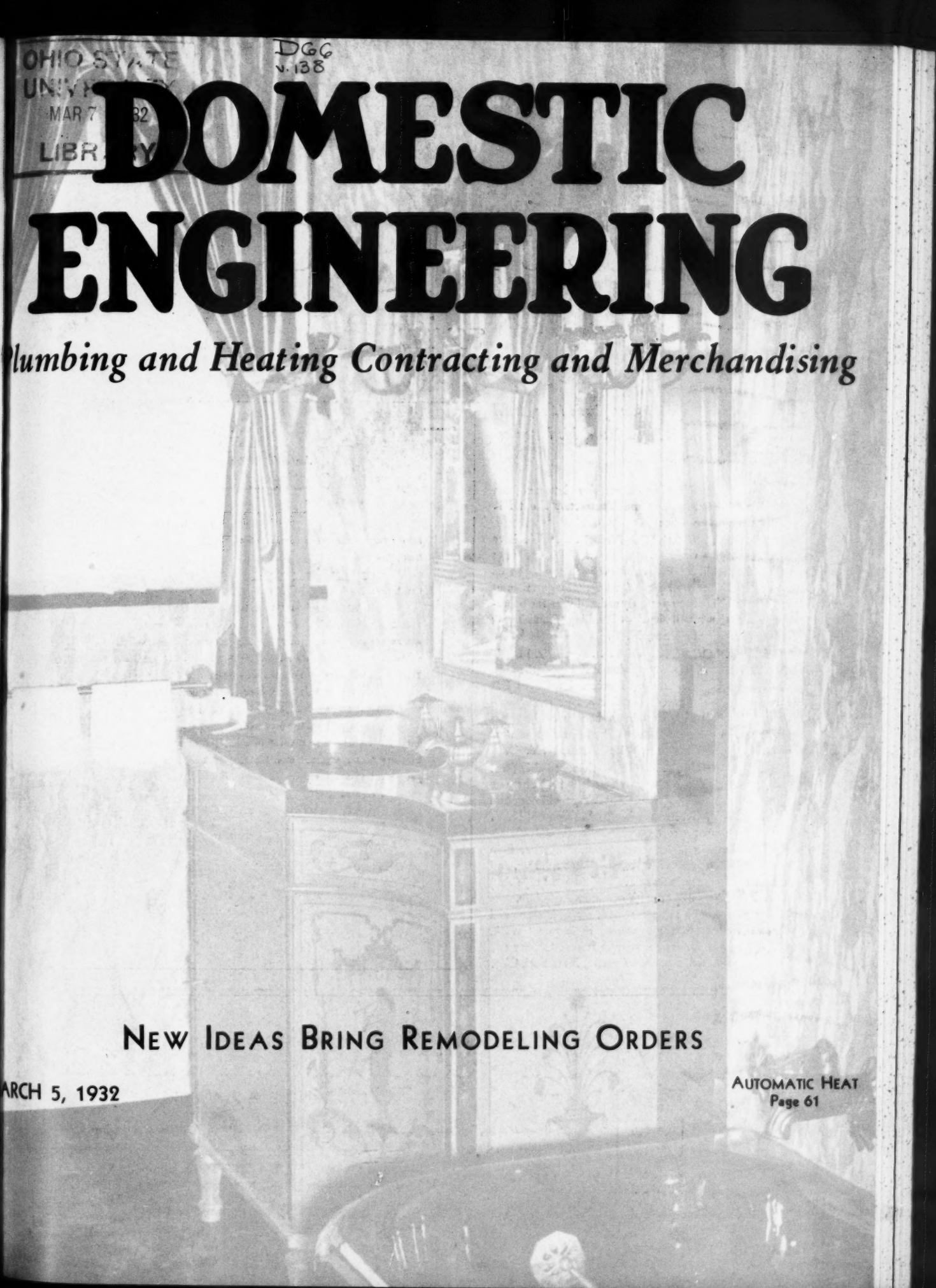
# DOMESTIC ENGINEERING

*Plumbing and Heating Contracting and Merchandising*



## NEW IDEAS BRING REMODELING ORDERS

ARCH 5, 1932

AUTOMATIC HEAT
Page 61

# "Business is GOOD with PR PIPE"

***James T. Williams finds it so, and gives credit to P R Pipe. Read his letter reproduced here.***

Then read the following extracts from letters written by other Master Plumbers and Contractors about P R Pipe and its advantages:

**ALL-AROUND SATISFACTION . . .** "We have used P R Pipe on a number of residential jobs for hot and cold water lines. The architects and owners as well as ourselves were well pleased with the appearance of the jobs and have been perfectly satisfied with the operation since the installation."— Stradling Plumbing & Heating Company, Utica, N. Y.

**BETTER-LOOKING JOBS . . . BETTER FLOW OF WATER . . .** "In my opinion P R Pipe is the most efficient carrier of hot and cold water. I use hard P R Pipe for new installation and soft P R Pipe for replacement work. P R Pipe looks better because of the bends which not only eliminate elbows, but give a better flow of water."— Arthur Fuchs, White Plains, N. Y.

**FREEZE-PROOF . . .** "In addition to this (i.e. quieter water passage and no water hammer) alternate freezing and thawing of water in P R Pipe will not cause splitting."— V. Green Co., Inc., Mamaroneck, N. Y.

P R Pipe is 99.9% pure copper, completely deoxidized and having a gun-barrel inside finish, free from flaws. It is rust-proof, will resist repeated freezing, and has the effective thickness of S. P. S. (standard pipe size) pipe. P R Pipe is joined with compression fittings.

It comes in two tempers: hard, for new work and exposed runs; soft, for concealed replacement work.

For further information, address Revere Copper and Brass Incorporated, 230 Park Avenue, New York City.

James T. Williams
*Plumbing and Heating*

1637 West Street — Utica, N. Y.

July 11, 1931

Revere Copper and Brass Incorporated
Rome, New York

Attention Mr. Robert M. Lake

Gentlemen:

I believe you will be interested in knowing that I have been using PR Pipe for the past three years and am now specializing in PR Piping exclusively. As the material cost is less than that of other non-corrodible pipe, I can take business that is let on a competitive basis and, furthermore, I find that because of the low cost and recognized excellence of PR Copper Piping, I can swing jobs to PR Pipe where iron was originally specified.

As a PR Pipe user, I have enjoyed continuously good business during a period when building fell off, a fact which has worked to the advantage of the company and the journeymen which we employ.

Yours very truly,
James T. Williams
James T. Williams

# Revere Copper and Brass INCORPORATED

Revere COPPER BRASS Products

Baltimore *Division, Baltimore, Md.* Michigan *Division, Detroit, Mich.* Higgins *Division, Detroit, Mich.*
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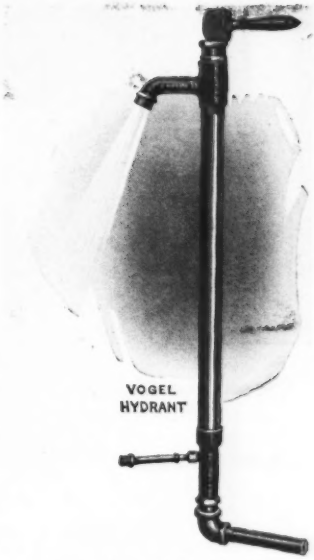
EXECUTIVE OFFICES: NEW YORK CITY
GENERAL OFFICES: ROME, N. Y.

# EVERY PLUMBER WANTS

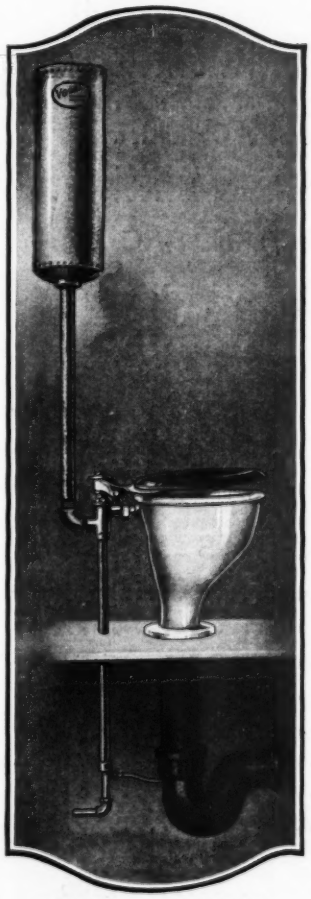
**1st . . . *Satisfied Customers***

**2nd . . . *Profitable Installations***

# . . . and VOGEL Frost-Proof Closets and Hydrants guarantee both




VOGEL FROST-PROOF HYDRANT



NUMBER ONE VOGEL FROST-PROOF CLOSET

Simple in operation. Sturdy in construction. Half a million in operation.

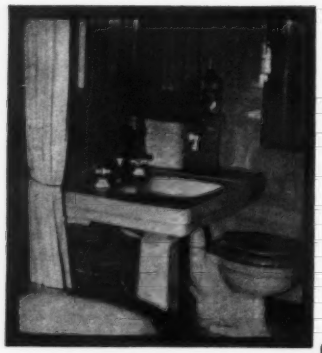
YOUR customer is always satisfied when you install a Vogel. You have given him the most durable and economical closet he can buy. More than 500,000 installations prove this—some of which have been operating for more than 15 years.

And the Vogel line has always been a profitable line for plumbers to handle. Vogel Closets and Hydrants are priced so there is a good profit left for the plumber, and, of course, *Vogels are sold only through the jobber and plumber.*

***Literature imprinted with your name and address sent promptly upon request.***

**JOSEPH A. VOGEL COMPANY**
**Wilmington, Del. St. Louis, Mo.**

VOGEL PATENTED *Frost-Proof* PRODUCTS




# DOMESTIC ENGINEERING

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# BYERS uses this

WHEN each length of Byers Pipe passes the hydraulic pressure test, it rolls across the "spiral stripe painter" and is MARKED for your protection.

Building and residence owners, the country over, LOOK for this red spiral stripe. It's their GUARANTEE that the finest wrought iron Byers has made, in 68 years of industry leadership, is installed to protect their properties.

And here is YOUR protection, too—a plan of material-identification that ties your reputation staunchly to the highest standards of construction practice. Make sure of getting this protection—the red spiral stripe for visibility; the name BYERS rolled in the metal for permanence. Where the job requires wrought iron—use Byers and get the satisfaction that comes from having the work you do speak plainly in your favor!

Byers Bending Pipe is a remarkable new-development specialty that you can get from no other source. Write for booklet describing it. If you have threading difficulties—send for Byers Pipe Threading Bulletin, free on request. A. M. Byers Company, Pittsburgh, Pa. Established, 1864.

You'll like Byers Jobbers—Good stocks—quick deliveries—dependable service.

**BYERS GENUINE WROUGHT IRON PRODUCTS**

PIPE • CASING • COUPLINGS • NIPPLES • WELDING ELBOWS • SPECIAL BENDING PIPE
BAR IRON • TUBING • PLATES • SHEETS • BILLETS

STANDARD of QUALITY for 68 YEARS . . . TODAY BETTER THAN EVER

# Between Ourselves

*"WE HAVE everything to gain and nothing to lose by so framing our merchandising policies and arranging our plans to encourage the dealer," says Morse Dell Plain, president of the Northern Indiana Public Service Co., in an article commencing on Page 25 of this issue. Mr. Dell Plain has made a careful study of the gas appliance merchandsing problem, and the arguments he develops favoring utility-dealer co-operation will interest plumbing and heating contractors.*

*Your Editor*

"DURING the last two or two and a half years, changes in the plumbing industry have been more rapid and more extreme, probably, than in any other like period," says W. W. Stevens in his article on Page 20 of this issue. Changes are taking place in the industry every day, and, therefore, the contractor must constantly improve his methods. The article describes the practices of a plumbing contractor in the Chicago district who typifies the group who are keeping abreast of the times. Every job he handles is approached from the standpoint of meeting the owner's individual requirements.

---

AN unusual case that shows how baffling an "insufficient supply of steam" can be and also illustrates how important it is to take all factors into consideration when analyzing a trouble job, is provided in the article starting on page 28, entitled "How a Unit Heater Trouble Job Was Solved." When trouble like this is encountered, frequently it is difficult to make the proper analysis without visiting the job. The article contains many ideas on trouble shooting on unit heater installations that you will find helpful.

---

THE "Spend for the Home in 1932" campaign continues to grow every day and each mail brings inquiries from members of the plumbing and heating industry all over the country. Already, more than 100,000 stickers and approximately 5,000 of the posters have been ordered by members of our industry alone. Business papers in various branches of the building industry are placing the idea before more than a half a million dealers. And now the opening gun has been fired to get the idea over to the public through the daily newspapers. Three hundred of the leading newspapers of the country, who in the past have been publishing constructive material regarding plumbing and heating, are to be furnished with publicity matter on the campaign. The Plumbing and Heating Merchandising section in this issue contains a complete report on the Spend for the Home campaign.

*"WE have studied the article, 'The Relief Siphon Air Loop,' and wish to state that it is a step to broadmindedness in the plumbing industry."—Master Plumbers Association of Union City, N. J.*

---

**AN OIL burner article, a gas article and a stoker article are the features in the AUTOMATIC HEAT section this time. "Progressive Oil Burner Merchandising" describes the operations of a heating dealer who has been successful in selling oil burners. In building his merchandising plan he looked around for the outstanding feature of other dealers' methods and then worked these in with his own ideas. "Co-operation with Dealer Sells Gas Heating" is the title of an article by William Masoner, entitled "Engineering for Stoker Installations." The author is Herbert K. Lees.**

---

ANOTHER installment of Harold L. Alt's series of articles on "Heating in Residences and Small Structures" appears in this issue. In this, the eighth, article of his series covering modern heating practices, Mr. Alt continues the consideration of steam heating systems. If you haven't been following this series, now is a good time to start. The article starts on Page 41.

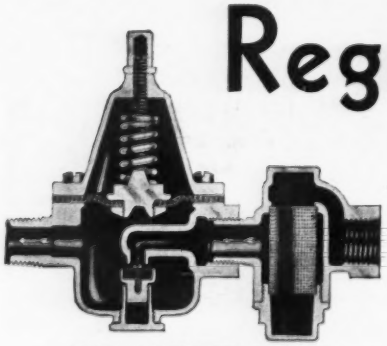
---

**THE telephone companies are constantly expanding their facilities and, consequently, are good business prospects. R. M. Starbuck has just completed a study of the plumbing requirements in the modern telephone building and he finds that they have now been standardized to a great extent. While local conditions and local plumbing laws affect individual buildings to a certain extent, nevertheless, the telephone companies have now reached the point where standards are being followed in buildings. The second and concluding article of the series by Mr. Starbuck on this subject appears on page 44. The first article appeared in the February 6 issue.**

***The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe.***

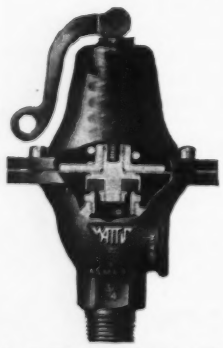
"HYLO" CITY
Built in 1931
In these and many other buildings of medium size HYLO Control is bringing the same marked advantages of even, continuous heat obtained in larger structures by Webster Moderator Control.
There is an Improved Webster System and a Webster Control designed specifically to meet almost every need and purpose. Write for a copy of the new Improved System catalog.
WARREN WEBSTER & CO., Camden, N. J.
Established 1888
IMPROVED
Webster
Systems of
Steam Heating
C9

# ANNOUNCING WATTS Regulator System



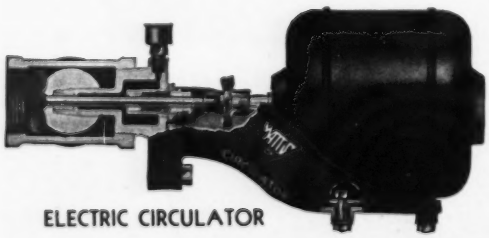
AUTOMATIC FEED VALVE AND STRAINER

AIR CUSHION TANK



SAFETY RELIEF VALVE

TRIDICATOR GAUGE



ELECTRIC CIRCULATOR

**TYPE No. 500**

*"Controlled Hot Water Heat"*

Consists of

Large Size Bronze Lever Handle Relief Valve
All Bronze Automatic Feed Valve
All Bronze Baffled-Screen Strainer
Silent Motor-Driven Electric Circulator
Special Air-Cushion Pressure Tank
Tridicator Gauge

## COMMON SENSE FEATURES OF THE WATTS REGULATOR SYSTEM

1. SAFETY—Relief Valve is A. S. M. E. Standard.
   Lever Handle allows for periodic testing.
   Extra large diaphragm adds safety factor by affording additional leverage.
   All-bronze construction and monel diaphragm is the last word in corrosion resistance.
   Special disc to operate under high temperatures and in constant water submersion.
2. AUTOMATIC—Bronze Feed-valve automatically keeps system full of water and bronze strainer prevents foreign particles from getting into valve.
3. AIR-CUSHION—Air-cushion basement tank takes up first quick expansion of the water and makes for less drippage from relief valve. It also gives the system an air receiver.
4. EFFICIENCY—Motor-driven propeller-type electric Circulator greatly increases circulation speed, giving greater fuel economy, more uniform heat, and does away with necessity of excessive firing of the boiler.
5. TRIDICATOR—This gauge accurately records altitude of the water, the pressure of the system, and the temperature.

The WATTS REGULATOR SYSTEM on a properly installed hot water heating system, is undoubtedly the last word in efficiency, reliability, durability, and comfort.

It not only finds itself in the luxurious home but has its place in every moderate home where the home owner is interested in safe, automatic, and economical heat.

Its first cost apportioned over a few years can actually be wiped off in fuel saving and in repairs and depreciation expense. Write for our new catalog.

**WATTS REGULATOR COMPANY**

*Makers of Water and Steam Regulating Devices Since 1874*

249 Lowell Street Lawrence, Mass.

John G. Kelly, Inc., Distributors, 210 E. 45th St., New York, N. Y.

W. H. Cunningham & Hill, Ltd., Canadian Distributors
269 W. Richmond St., Toronto 2, Canada

# 8 new features

## that make Kennedy Fig. 27 even better than before

The new Kennedy Fig. 27 Standard Bronze Gate Valve for 125-lb. steam pressure or 175-lb. water pressure

***Improved in every part!***

1. Handwheel.
2. Stem.
3. Stuffing Box.
4. Packing Rings.
5. Stem Threads.
6. Bonnet.
7. Pipe Ends.
8. Material.

THE heavy body, wide pipe end hexes, large bonnet hex close to the body, deep stuffing box, and attractive appearance of this new Kennedy Standard Bronze Gate Valve are some of the *exterior* improvements we have made in Fig. 27.

The *inside* of the valve, too, has been improved throughout. The new Fig. 27 has extra stem contact threads in the disc, stronger and stiffer stem, gland type stuffing box with special composition square-section packing rings, and additional threads for connecting to pipe ends.

Kennedy Fig. 27 — for half a century the favorite gate valve of thousands of engineers and contractors — is now greater value than ever before.

When you get your first lot of these new valves, notice their increased weight, their uniform ruddy true-bronze color, the remarkably smooth texture of the metal, and the clean flawless appearance of both machined and unfinished surfaces of the castings.

Here is a valve that will do credit to your finest jobs— *and it costs no more than standard market prices.*

**SEE the new Fig. 27**

**Send the coupon for sample valve**

THE KENNEDY VALVE MFG. CO., Elmira, N. Y.

Gentlemen: Please send me a .....-inch new Kennedy Fig. 27 Bronze Gate Valve. I am to pay no more than standard market price, and it is to be billed to me through the following dealer:

Name..... Address.....

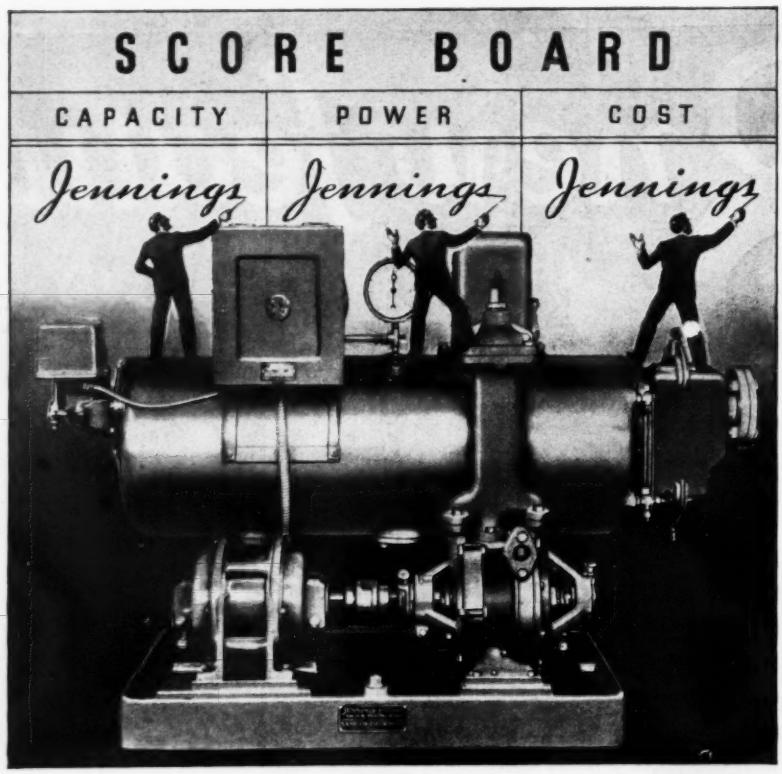
Very truly yours,

(Signed).....

Address.....

# KENNEDY

## VALVES-PIPE FITTINGS-FIRE HYDRANTS




# JENNINGS SCORES FIRST *on Every Count*

## ...gives you more for your heating pump dollar

Today, more than ever before, dollar value is the first requisite of any piece of equipment. There is value without equal in Jennings Vacuum Heating Pumps.

These pumps are noted for their generous air and water capacities. If you buy pumping instead of a pump, your dollar invested in a Jennings will actually purchase the removal of more air and more water from the system in a given time.

Operating and maintenance costs, too, are less for Jennings Pumps. These efficient units consume less power; require less attention. They often serve 10 and 15 years without repairs or replacements of any kind.

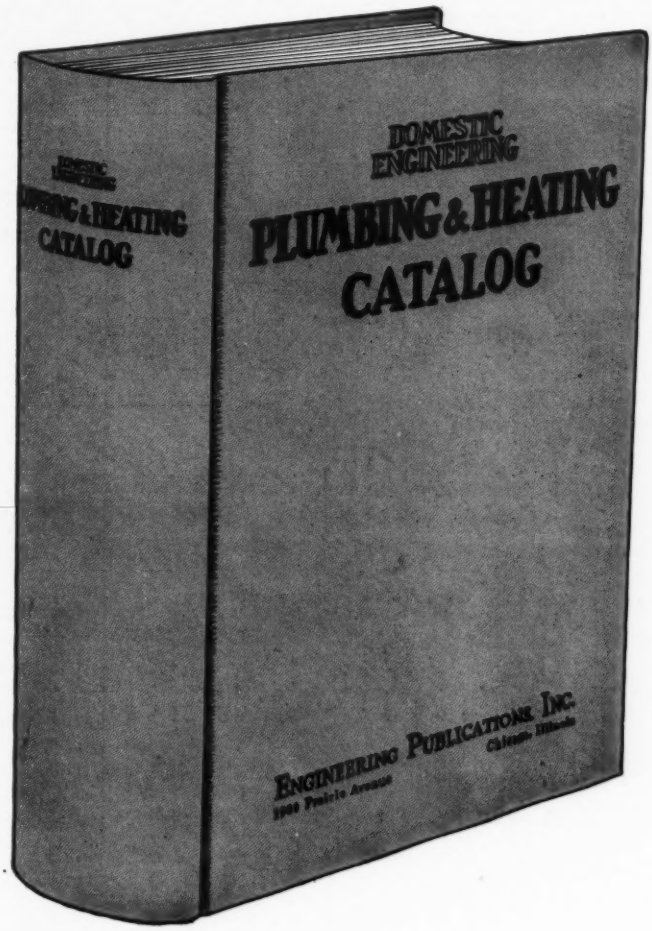
When it comes to selecting a pump by ratings in square feet of radiation bear this in mind. You should also insist on a minimum power consumption and a definite air and water capacity in a given time. Then you will find that there's a Jennings Heating Pump to handle your job at a lower first cost.

**BOOKLET DISCUSSES SELECTION OF VACUUM HEATING PUMPS**

*A new booklet, dealing with this problem in detail will be sent, on request, to anyone interested in obtaining more for his heating pump dollar.*

NASH ENGINEERING COMPANY, 41 WILSON ROAD, SOUTH NORWALK, CONN.

# *Jennings Pumps*




# "Your catalog should come first"

"Your catalog should come first in every progressive master plumber's office."
*William Wolff, Plumbing Contractor, Brooklyn, N. Y.*

"Your general catalog is the best that has ever been put out for the plumbing business."
*Colburn's Plumbing & Heating Service, Beaumont, Tex.*

"Since I am getting the habit of using it, I don't know how I got along without it."
*W. F. Schwartz, Plumbing and Heating, Baltimore, Md.*

"We consider it complete in every detail."
*Eatman Plumbing Co., Albany, Georgia*

"We feel nothing has been left undone to make this the best catalog possible."
*Burns, Lane, Richardson Co., New Brunswick, N. J.*

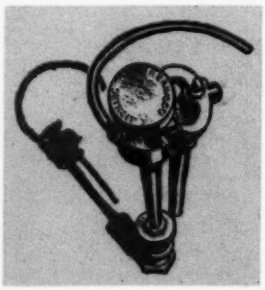
**DOMESTIC ENGINEERING**
PLUMBING & HEATING CATALOG
**1900 PRAIRIE AVENUE · CHICAGO**

# These are Profit Sounds for You

Leaky, noisy ball cocks are not only water wasters, they're annoying as well. But their noises are profit sounds for you.

Hundreds of homes in your community are in need of new ball cocks — *Sherwood Ball Cocks* — right now.

Sherwoods are the ball cocks that close against any city water pressure without whistling, gurgling or leaking.



Take Sherwood's tip — sell Sherwood Ball Cocks to these homes. Not only will they make you an attractive profit but they'll open up opportunities for the sale of pottery, enamel ware and other plumbing equipment.

People are spending for their homes now — get your share of those expenditures.

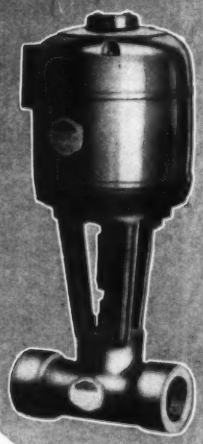
Order Sherwood Ball Cocks from your jobber *now*. Start to sell them at once!

**SHERWOOD BRASS WORKS, Jefferson and Mt. Elliott Aves., DETROIT, MICHIGAN**

REPRESENTATIVES: J. A. Riordan Co., (Inc.), 1600 E. 7th St., Los Angeles — 303 Colman Bldg., Seattle — 955 Bryant St., San Francisco — E. S. Thompson, 2401 Chestnut St., Philadelphia — Fred G. Hoffman, 831 Edgewood Ave., Trenton, N. J. — Fred S. Wilsey, Plymouth Bldg., Minneapolis — Geo. W. Smith Co., 348 W. Penn Pl., Pittsburgh

**SHERWOOD Ball Cocks**

# THERE IS A REASON for "Hot Water Heat"



"Thrush System" has eliminated all of the objectional features of Hot Water Heat. Hot Water has always been recognized as the mildest and most healthful method of house heating and it only remained for Thrush to develop controls to increase efficiency, economy of installation, low operating cost and automatic operation. Thousands of heating contractors have found that it PAYS to install Thrush System because initial profits from the installation are in line with sensible operating policy and costly service calls are minimized.

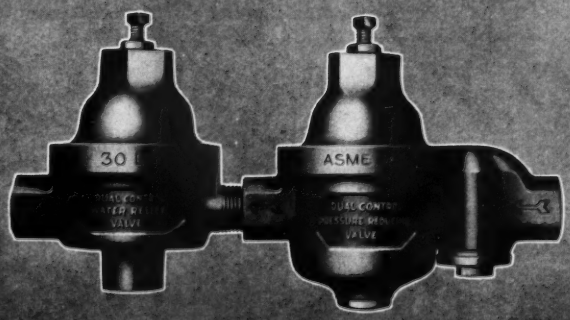
Now!—is a good time to acquire additional knowledge on Thrush System of Hot Water Heating. Mail in the coupon—there will be no obligation whatsoever.

## H. A. THRUSH & CO.

PERU, INDIANA.

**MEETING THE DEMAND FOR MODERN HEAT**

THRUSH SYSTEM OF HOT WATER HEATING H. A. THRUSH CO. PERU Quality




H. A. Thrush & Company
P. O. Box 459, Peru, Indiana

Gentlemen: Please have your sales engineer call when he is in this vicinity—I am interested in learning more about Thrush System. I understand that there is no obligation.

Firm.....

Name.....

Address.....

*Insist on Genuine Thrush Equipment*

# NEW LOW PRICES

EFFECTIVE February 15th, trade prices on all Hoffman heating specialties have been substantially reduced. Manufacturing economies we have effected are now passed on to our many friends in the trade.

The qualities which have made Hoffman products famous for performance, are thus available for use in a greatly enlarged field.

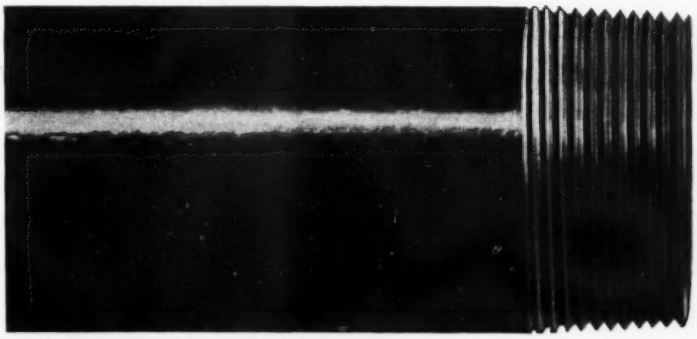
Your copy of our new Trade Price Sheet is ready. Ask your wholesaler for it . . . or write to us. Hoffman Specialty Company, Inc., Dept. RX-81, Waterbury, Conn.

**HOFFMAN SPECIALTY COMPANY INC**

# NOT JUST A PIPE MILL, BUT A STEEL MAKER

In the making of J & L steel pipe, the knowledge, ability and experience accumulated through 81 years of iron and steel manufacture, have been utilized.

Ownership-control over all raw materials and processes of manufacture from ore to finished product, permits J & L to maintain a standard of unvarying high quality. Making the steel as well as the pipe, J & L can conform to the strictest specifications. Having every laboratory and manufacturing facility, J & L can meet every customer need. The fact that J & L is not just a pipe mill but a *steel* maker, carries the strongest assurance of J & L steel pipe quality, service and satisfaction.



## THOROUGHLY COATED

The coating applied by special process, devised in the J & L mill, protects the pipe from corrosion, assures that it will arrive on the job in as good condition as when it left the mill. This special process involves the use of a selected oil, applied so that it forms a tough skin that will not soften and melt off in warm weather. This operation is another evidence of the determination of J & L to produce pipe that will, in all respects, serve better, and last longer.

## OUTSTANDING FEATURES OF J & L STEEL PIPE

1—Uniform Quality Steel
2—Free from Excess Scale
3—Accurate Mill Threads
4—Free Cutting—Easy to Thread
5—Sound Couplings
6—Thoroughly Coated
7—Rigidly Inspected
8—Galvanized Pipe Uniformly Coated—No Clogging with Spelter

J&L STEEL

**JONES & LAUGHLIN STEEL CORPORATION**

AMERICAN IRON AND STEEL WORKS

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

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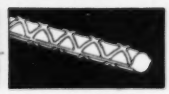
Warehouses: CHICAGO CINCINNATI DETROIT MEMPHIS NEW ORLEANS PITTSBURGH

J & L JUNIOR BEAMS

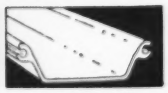
J & L STEEL PIPE

J & L LIGHT CHANNELS

J & L NAILS and STAPLES BRIGHT and GALVANIZED


J & L CONCRETE BARS

J & L STRUCTURAL STEEL


J & L STEEL PILING

# Join this Growing Movement *now!*

Through more than twenty publications serving all phases of the building and home industries and serving, too, the advertising men in the manufacturing divisions of these industries, the "Spend for the Home in 1932" movement has been put before more than half a million persons.

The plumbing and heating field, through the efforts of DOMESTIC ENGINEERING, has used more than 100,000 stickers of the slogan in colors, close to 20,000 posters and dozens of electrotypes for newspaper advertisements, postcards, letterheads, envelopes, etc., etc.

The editorial pages of this issue of DOMESTIC ENGINEERING suggest even further uses for this slogan which has so thoroughly blanketed the retail field and which is swiftly mounting in importance as a sales builder.

You are invited to join this movement. DOMESTIC ENGINEERING makes it possible for you to do so at a trifling cost. When you use the posters, stickers and electrotypes of the slogan, you tie up with what is perhaps the fastest growing sales movement of the building and home industries.

**GET your supply of this material today. Here are the prices of the window cards or posters, size, 8¼x12 inches.**

**The prices of these cards are as follows:**

10 cards for 50 cents
25 cards for 75 cents
50 cards for $1.25
100 cards for 2.00
500 cards for 9.00
1000 cards for 17.00

**We cannot undertake to ship less than 10 of these cards.**

**Stickers of the slogan, in the same design as shown above but of 1¼ in. x 2 in. proportions are also available. Order these stickers. Use them on your letterheads, envelopes, billheads, business cards, etc., etc.**

**The prices of the stickers are as follows:**

1000 stickers for $1.50
2000 stickers for 2.50
5000 stickers for 5.00

**Get a supply of cards and stickers now.**

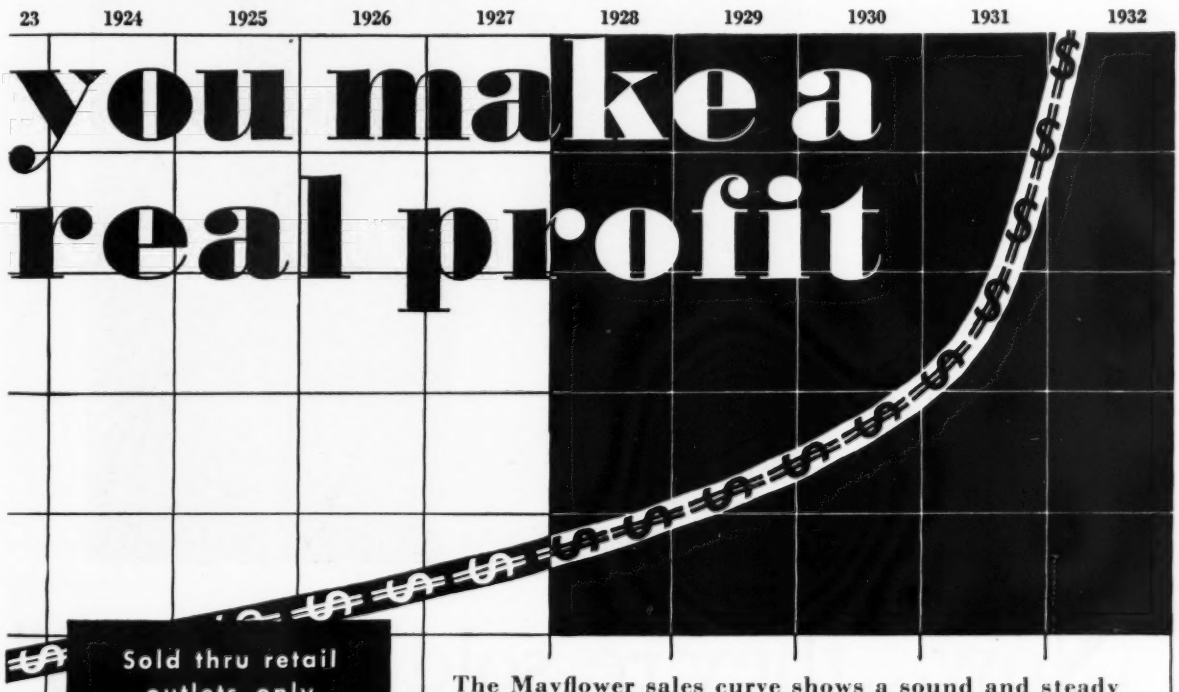
**Electrotypes of various sized cuts of the slogan are also available. These can be had for one and two-color printing. Electrotypes are priced as follows:**

| | |
|---|---|
| Electro for one-color printing, 2⅜x2⅜ in. | $0.35 |
| Electro for two-color printing, 2⅜x2⅜ in. | .65 |
| Electro for one-color printing, 3½x5½ in. | .55 |
| Electro for two-color printing, 3½x5½ in. | 1.00 |
| Electro for one-color printing, size approximately 8x12 in. | 2.50 |
| Electro for two-color printing, size approximately 8x12 in. | 4.50 |

**Order what you need to get in on this big drive now. Read the editorial pages of this issue for more details.**

**DOMESTIC ENGINEERING, 1900 PRAIRIE AVE., CHICAGO**

# When you sell a MAYFLOWER you make a real profit




Sold thru retail outlets only

Period-styled cabinets

Pre-sold by national advertising

A complete refrigeration line

Refrigeration since 1920

**The Mayflower sales curve shows a sound and steady progress. But sales alone are not enough. There must be a parallel profit curve. And that is where Mayflower offers you a definite advantage over electric refrigerators that sell on price alone.**

**In the electric refrigeration industry today there is one strategic point where price and sales combine to produce the greatest profit for the dealer. Below that point, low price allows too small a profit. Above it, sales decrease as prices rise.**

**Mayflower—backed by more than eleven record-breaking years and by a strong national advertising campaign—offers the retail merchant a product and a selling plan built around that profit-paying point. Get the facts and figures now. Trupar Manufacturing Company, Dayton, Ohio. Canadian factory: Mayflower Corporation of Canada, Ltd., Hamilton, Ontario.**

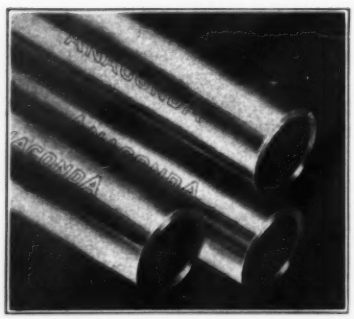
*MAYFLOWER*
ELECTRIC REFRIGERATION

**Send us your name and address and we will mail you our booklet, outlining the complete Mayflower retail merchandising plan.**

ANACONDA
from mine to consumer

# "Now...they're sold on Brass"

"After spending more money for rust repairs than the initial 'saving' rustable pipe seemed to offer, they are sold on *Brass* Pipe . . . "



Most home builders and owners know that pipe that rusts sooner or later causes expense. They know, too, that Brass Pipe *cannot* rust... that the name "Anaconda" stamped every foot means quality safeguarded throughout manufacture. It is worth your while to take advantage of this public acceptance.

Leading plumbing supply houses carry Anaconda 67 for normally corrosive water, 85 Red-Brass Pipe for highly corrosive water, and Deoxidized Copper Water Tubes. The American Brass Company, General Offices: Waterbury, Connecticut.

# ANACONDA BRASS PIPE

# Our Industry

## READY TO FIGHT

How has the plumbing and heating industry been training to go after more business and bigger profits in normal times?

### *Some Recent Changes*

Prices of materials have been put in line with the general downward trend.

Quality has been maintained or improved to attract consumer attention.

Cuts in union scales have been common in most large cities.

The advantages of going after home and remodeling work are now better understood. Even labor in some cases has offered to work for less money on remodeling jobs.

This issue reports a movement to enlist wholesalers and dealers in a merchandising program marked by the prominent display of price tags on all plumbing and heating merchandising.

Improvements in products are adapting heating and plumbing goods to give even greater comfort and convenience. This change is coming not only through manufacturers of long standing in this field but through the entrance into the heating and plumbing industry of big companies who have been successful in other lines.

Slowing down of big building construction has led specialists in that field of engineering and contracting to turn their attention to the home. As a result, so-called large scale operations are being attempted in a small way and prepared for in a large way.

The financing of home construction is under fire with the likelihood of conditions being so changed that the burdensome risks which have held back home building will be removed.

The strong position of the plumbing and heating dealer as a distributor is being better understood. A report in this issue of the address by Morse Dell Plain shows that utility executives are learning that sales can be increased through genuine cooperation with the dealers.

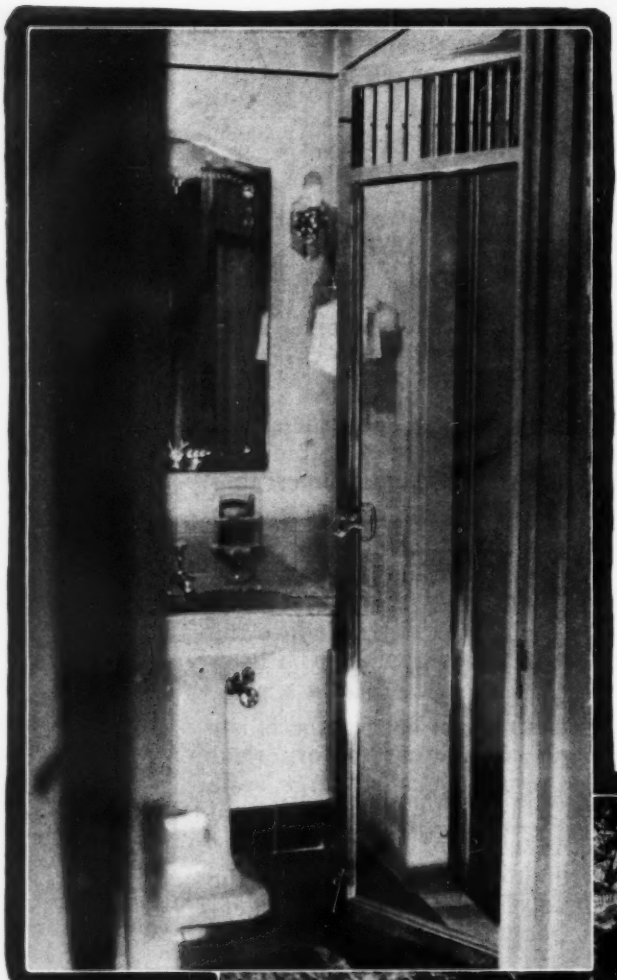
And the "Spend for the Home" program, as reported in this issue, is getting results.

### *Getting Ready*

The industry is learning to use its best weapons.

# New Ideas Bring Orders for Remodeling

By WM. W. STEVENS



DURING the last two or two and a half years, changes in the plumbing industry have been more rapid and more extreme probably than in any other like period. In order to keep pace with the times, in many instances, the plumbing contractor has been required to change his entire attitude toward his work and adapt himself and his organization to these different conditions. In most cases this has been difficult. The important thing is that these changes are still going on. No contractor can say with any degree of assurance that he has an absolutely sure method of procedure that is going to last him for the next five years, provided of course he plans to progress. The natural conclusion then is that the contractor must constantly improve his methods.

One plumbing contractor who is serving one part of the suburban area surrounding Chicago stands out as typifying the class who are keeping

*Fig. 1—At the left is a view of a remodeled bathroom where many original ideas were worked out*

*Fig. 2—Below is the new addition above the cornice which made room for a new bedroom and bath*

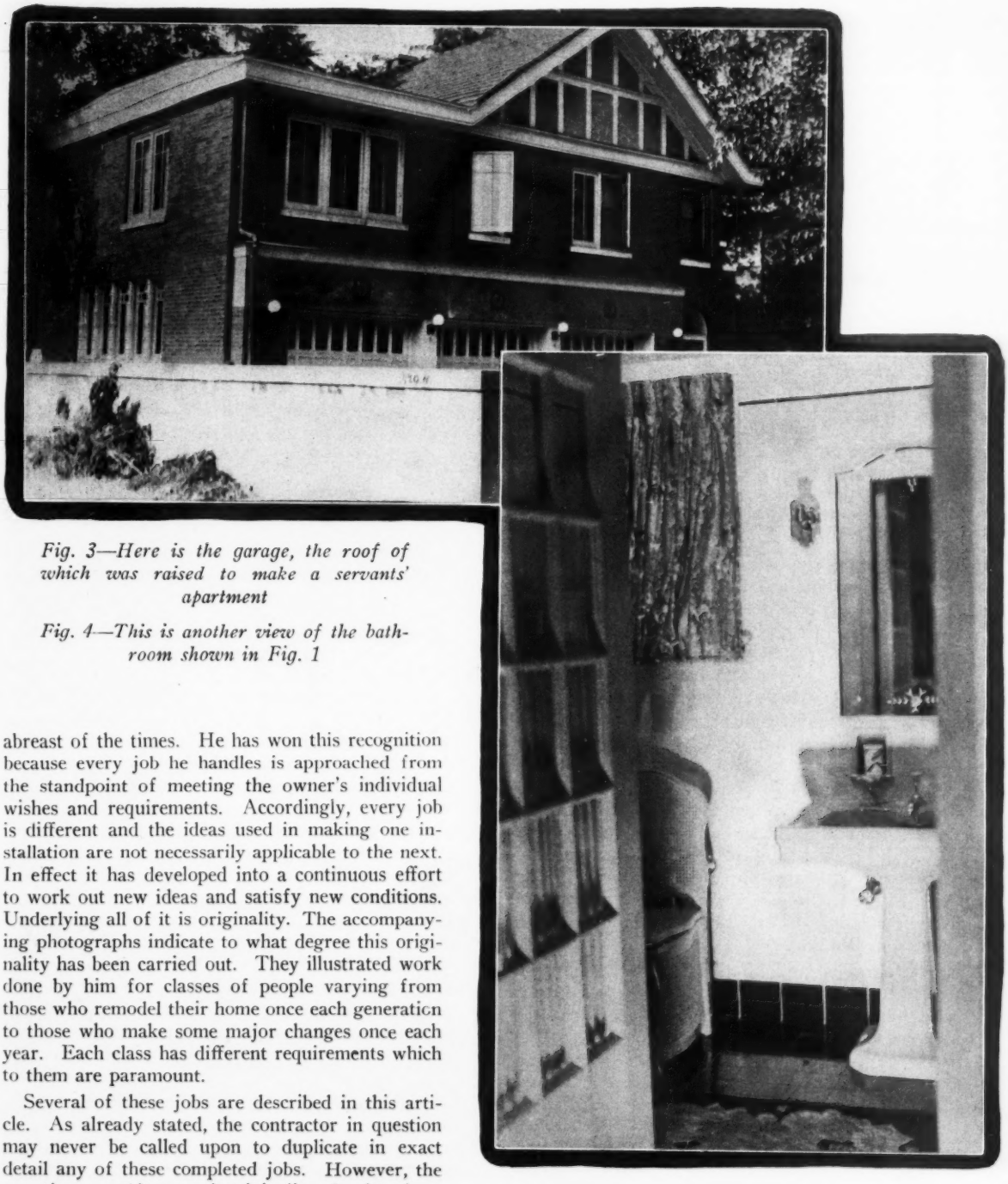


*Fig. 3—Here is the garage, the roof of which was raised to make a servants' apartment*

*Fig. 4—This is another view of the bathroom shown in Fig. 1*

abreast of the times. He has won this recognition because every job he handles is approached from the standpoint of meeting the owner's individual wishes and requirements. Accordingly, every job is different and the ideas used in making one installation are not necessarily applicable to the next. In effect it has developed into a continuous effort to work out new ideas and satisfy new conditions. Underlying all of it is originality. The accompanying photographs indicate to what degree this originality has been carried out. They illustrated work done by him for classes of people varying from those who remodel their home once each generation to those who make some major changes once each year. Each class has different requirements which to them are paramount.

Several of these jobs are described in this article. As already stated, the contractor in question may never be called upon to duplicate in exact detail any of these completed jobs. However, the experiences and general originality developed on one installation may be carried over and reflected in his future work. A description of this work is presented with this in mind so that these same experiences may serve other plumbing contractors as guides in making their installations more highly original.

Early in his change-over to meet the new demands by owners, this contractor recognized the necessity for his assuming full responsibility for the entire remodeling project. When a bathroom was remodeled, he found the owner thought in terms of new fixtures, modern color effects and a tile wall to set off the fixtures. In other words, the entire project was centered about the change in plumbing. This placed the plumbing contractor in the position of being the most important one on the job and the complete and final satisfaction of the owner depended upon how successfully the minor changes and tile work were made to form a background for the new plumbing fixtures. The result is that this contractor who in former times had been looked upon as just one of a number of subcontractors working under a general contractor, now has assumed the position of general contractor in

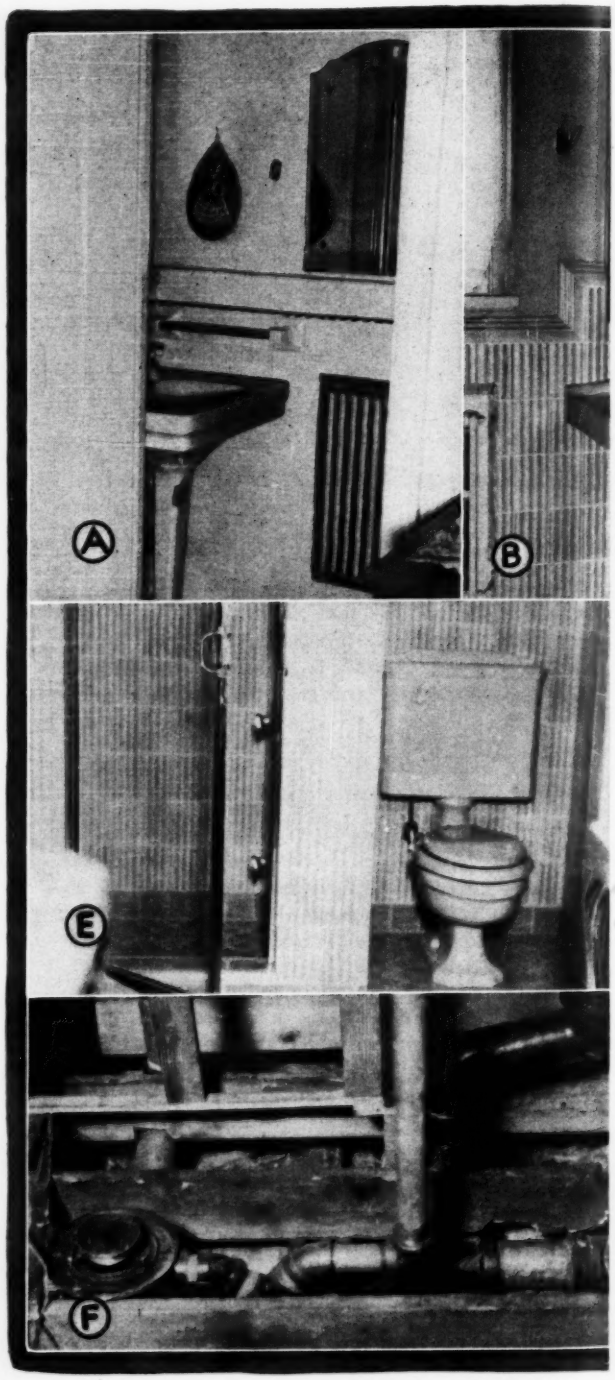
direct charge of plumbing. He is the one who makes a practice of engaging carpenters, plasterers and tile setters. Their work is installed so as to conform to the requirements of the plumbing installation and it is this plumbing contractor who tells them when to start. Furthermore, he is the one who checks all of the work to assure that the quality of the completed job comes up to that which is agreed upon.

The photographs on the first two pages of this article illustrate one of this contractor's jobs. The owner happens to be of the type that is not satisfied unless some major changes in his house or grounds are made each year. One year the roof of the garage was raised to form a second story which was built into an apartment for his servants. This is shown in Fig. 3. Last year a second story was added to a sun room. This provided a new second floor sleeping room and to make it complete, the bathroom shown in Figs. 1 and 4 was installed. The completed exterior effect is seen in Fig. 2. The original wood cornice at the first floor ceiling, which was not disturbed, indicates the extent of the addition.

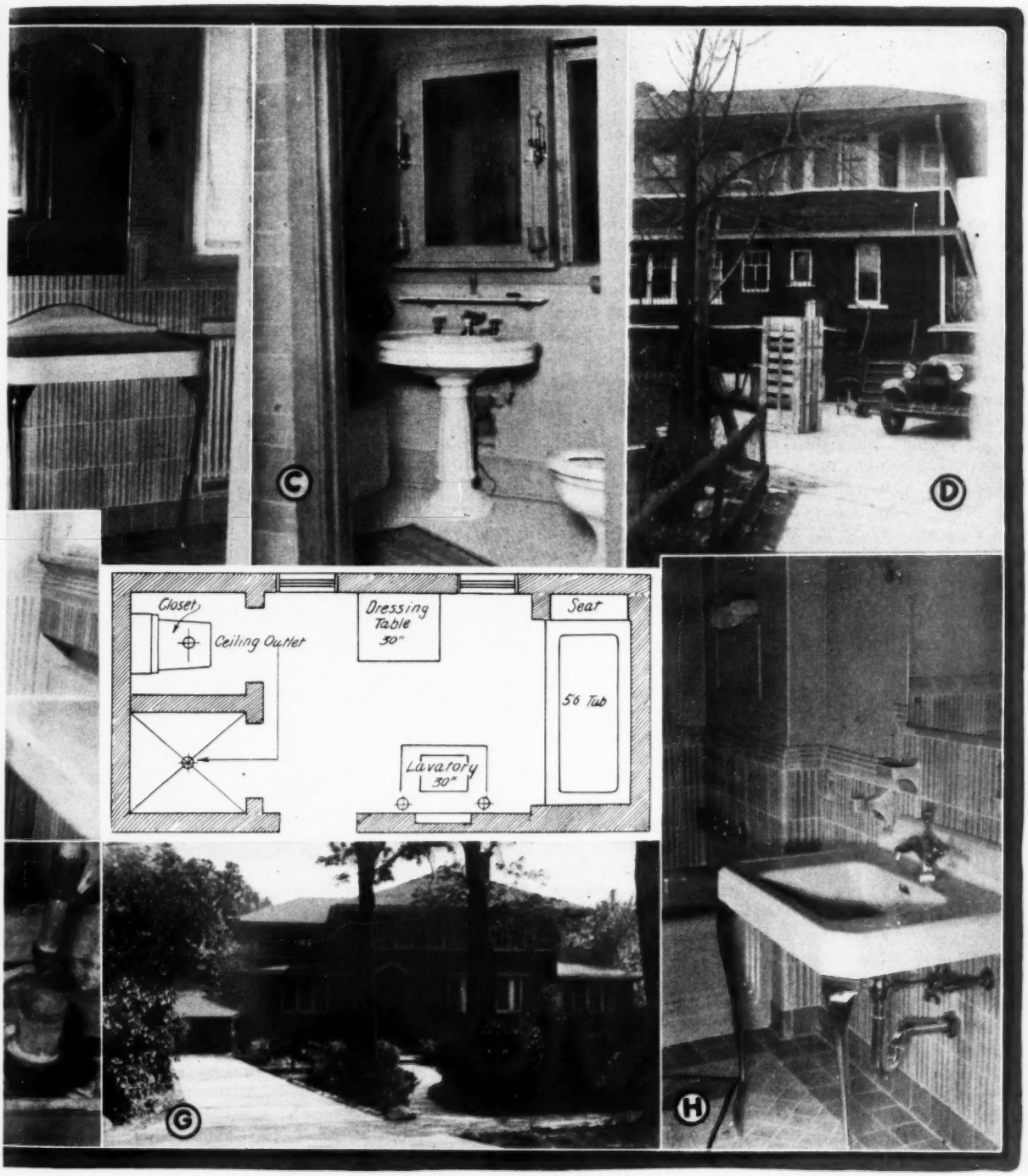
### SPACIOUS SHOWER STALL PROVIDED

The quality of the installation is portrayed by the photographs shown in Figs. 1 and 4. While the bathroom space was not large, the room allotted was sufficient to work out an attractive arrangement of fixtures. The shower stall was made 3 ft. wide and the full depth of the room which is 6 ft. This gave a very spacious compartment and it utilized room which otherwise would have been wasted. As a result of the shower stall being so deep, it is possible for the user to be completely out of the spray without a sense of being cramped. A tile seat was built into the corner farthest from the shower, thus making the compartment in effect a combination shower and dressing stall. By creating an effect of spaciousness in the shower stall, any sense of smallness in the main part of the bathroom was overcome. These are some of the considerations which make this contractor's work outstanding.

The photographs and drawing shown on the second two pages of this article illustrate a second original job which was done by this contractor. The rear of the house was pushed back to accommodate the new bathroom and an additional bedroom. The view shown in "C" is a picture of the bathroom before remodeling. All of this was torn out and the space was lined with linen cases and made to serve as a passageway to the new bathroom and bedroom. All of the new bathroom was placed on the other side of the wall containing the medicine case. The new bedroom is to the left in "C." The next point of interest among the illustrations is the view of the piping in "F." This is for the watercloset, shower stall and a second set of fixtures, including a watercloset and lavatory on the opposite side of the wall, arranged back-to-back. The piping presented a difficult problem because of the small space available for it. Note that the illustrations are arranged on the page so as to show the completed work in "E" immediately above its respective piping shown in "F." The second watercloset and lavatory are shown in




"A," above all of this. As already stated, these two sets of fixtures are back-to-back. The second watercloset and lavatory serve the bedroom exclusively. It occupies very little space. The illustration designated as "D" shows the rear of the house and the second window to the left of the bay is one of the main bathroom windows. The plumbing contractor was called upon to move the crated tub, shown on the ground, through this small opening. This presented a real problem when the features of the house and roof are considered. If it were a flat decked roof




*The view marked "A" shows the children's lavatory. It is back-to-back with the fixtures shown below in "E." The new rear wall with the dressing table furnished by the plumbing contractor is seen in "B" and the old bathroom is in "C." The rear of the house, "D," indicates the problem presented in moving the bathtub into the building. Note that the piping in "F" is for the fixtures immediately above in "E"*

above the bathroom, a beam might have been anchored with weights to the roof with the overhang serving as a support for the block and tackle. The pitched roof precluded this possibility.

Another feature which first served as a difficulty and then an advantage was the uncovered porch. The final solution came in carrying the tub to the porch and placing it under the bathroom window through which it was to be carried. Next, two 4-in. by 6-in. posts, 20 ft. long were set up about 5 ft. apart, and a cross member was fastened securely to

the top of them. A block and tackle was then swung from the cross member so that all of it assumed the purpose of a derrick. Of course, the posts were held firmly at the bottom and they were braced securely for sidesway. The tub then was hoisted up to the window opening and lifted into place.

The addition to the house is shown very clearly in "G." It is the left hand second story wing. Referring to the bathroom layout, the dressing table was located on the exterior wall between the two windows. This is seen in "B." The lavatory is on the opposite interior wall and is seen in "E." This arrangement keeps the piping on the interior wall and at the same time balances the fixture arrangement. It is debatable as to whether the natural light from the windows is most important for the dressing table or for the lavatory. Notice in "E" that side spray shower heads were used as well as an overhead shower. These were located on both the front and rear walls. The lower head shown was located 13 in. above the floor. On the other wall the lowest head was located 26 in. above the floor. The second front wall head is seen to be 39 in. high and the second rear wall head is 52 in. above the floor. It will be noted that with this spacing, a staggered effect in a vertical plane was obtained.

### SHOWER FLOOR DRAIN PLACED OFF-CENTER

Another idea which made this job distinctive was that of placing the floor drain off-center so that the user, when in the center of the stall, would not stand over the drain. The advantage of this can be seen readily. When the drain is between the user and the wall containing the main shower heads, the water has a better chance to flow away. Obviously, as the user stands on the floor drain a part or all of the opening is covered. A second point is that it is not particularly comfortable to stand on the drain perforations or slots. Still another point is that the floor is pitched to the drain and when soap is dropped, naturally it will slide to the lowest point. If this is located beneath the user's feet, the chances of his slipping and sustaining injury are increased. The contractor in question makes a practice of locating the drain, in a square stall, one-third the depth of the stall back from the main shower head wall.

As already stated, the lavatory and watercloset shown in "A" was installed to serve the new bedroom. This is a child's room and while the space is small, it is ample for the purposes. Where parents have experienced the disadvantages of single bathroom facilities, it should not be difficult to sell them on the idea of second-bathroom conveniences. This is especially so where arrangements such as these, require only the space of a small sized closet. If the owner requires persuasion or reasons for these additional conveniences, he should be reminded of the tendency of children to splash in the bathroom. For children's purposes, the smaller the space allotted to them, within reasonable limits, of course, the better it is, because then they are not encouraged to play there when alone.

The two views shown in Fig. 5 illustrate another bathroom which was installed as a remodeling job

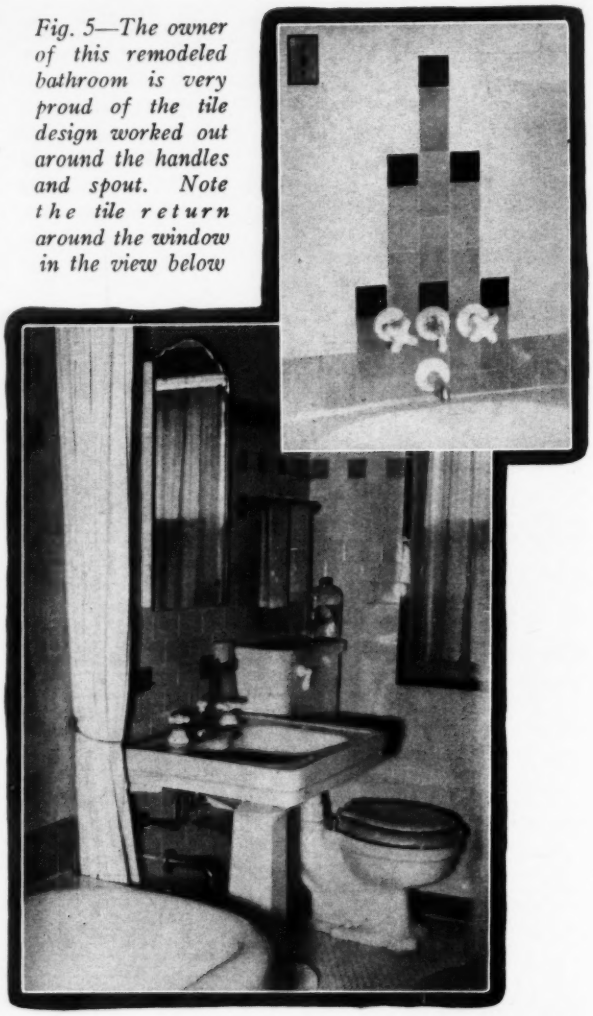


*Fig. 5—The owner of this remodeled bathroom is very proud of the tile design worked out around the handles and spout. Note the tile return around the window in the view below*

by this contractor. It is in a modest home owned by people of the type who do not make changes very often. However, even here they had their special requirements. One of the items which stands out in the owner's mind as being worthy of greatest note is the tile decoration over the handles and spout for the bath tub. It is a touch of originality which was worked out by the plumbing contractor and without it, the entire job probably would have fallen into the class of just a remodeled bathroom as far as the owner is concerned. As it is, usually that is the first feature he points out. Another item about the tile work which marks it as a first class job is the tile return around the window. This eliminates wood trim and makes a much neater job. These items are mentioned because the plumbing contractor who sublets the tile contract must know what goes to make up good tile workmanship. Otherwise, it is impossible for him to assure the owner that the completed effect will be satisfactory. Furthermore, when defects show themselves as they will do, the plumbing contractor who handles the entire job is held responsible.

It should be recognized that underlying all of these items of originality there is a complete and sound understanding of everything involved.

# "Why Not Help the Dealer to Make More Money on Gas Appliances?"

By
MORSE DELL PLAIN
*President, Northern Indiana Public Service Co.*

THE aggressive sales activities of our sales departments, backed up by the sound and forward looking policies of our managements, have developed the gas industry to its present position. These aggressive sales activities must continue if our industry is to continue to grow and develop. However, the future sales program must be developed in harmony with certain fundamental principles of trade relationship that are rapidly becoming nationally recognized.

**The broadening of the field will also broaden the scope of the manufacturers' advertising and through the medium of trade magazines published primarily for allied trades bring the story of gas service and the possibilities for the sale of gas equipment to these trade bodies. I commend this thought to both manufacturers and utilities.**

These broad national principles provide a background for the local utility to unite with the other interested elements of the industry in a sales program, where, by an orderly and co-ordinated effort, the story of the great benefits of gas service to the domestic user may be told to the maximum number of homes. The use of gas in the home has always been the backbone of our business, and the domestic field is still our greatest potential market.

Executives in the gas business have been talking about the advantages and the desirability of a sound trade relations policy for twenty years or more. A few years ago the subject received national recognition, as we found ourselves subjected to a nation-wide attack on account of our merchandising policies. Finding ourselves suddenly on the defensive, for a time our attitude could only be protective. Any curtailment of the merchandising of gas appliances would be a shaft plunged at the very vitals of our business development progress.

Thanks to level-headed thinking and intelligent leadership on both sides, it was decided to have our representatives sit down with representatives of our natural trade allies and attempt to evolve a set of fundamental principles to be used as a guide in building a sound utility sales and dealer co-operation program. A set of six fundamental principles resulted from these conferences.

**The measuring stick of the effectiveness of a utility sales department should be the increased load that its own efforts, plus that of the dealers, bring to the company.**

Now, a "principle" is not a law, nor a rule, nor a policy—it is simply a guide. These six fundamentals were stated as principles, so that each company could give special consideration to its own local conditions. It is their broadness that makes them so readily adaptable for local interpretation.

*"All gas appliances offered for sale by all co-operating agencies shall bear the seal of approval of the American Gas Association Testing Laboratory."*

Isn't it a constructive step forward to have the National Association of Master Plumbers and the National Retail Hardware Association pledge themselves to handle only laboratory approved equipment? Isn't it one of our big arguments that we merchandise because the dealers sell sub-standard equipment? Realizing that the American Gas Association seal of approval is primarily concerned with safety of operation, the fact that these associations are going to handle only approved gas appliances is surely a step forward.

*"No appliance or merchandise not directly related to the use of gas shall be sold by gas utilities."*

This is a concession we should be glad to make. A sale of cuckoo-clocks on the theory that the cuckoo-clock makes the kitchen more interesting to the housewife and therefore she will use more gas is somewhat far-fetched. It would be just as logical for the gas company to sell bath salts on the theory that with bath salts the housewife would take more baths and therefore use more gas-heated hot water.

*"In all merchandising activities, the resale mark-up of all gas appliances that have received reasonable customer acceptance shall be consistent with present day merchandising practice. There shall be no premiums given with nor trade-in allowances made in connection with the sale of any such appliances unless all co-operating agencies are in a position to co-operate."*

A very sound principle and worthy of analysis. It suggests that an appliance, the distribution of which has passed the pioneering stage, be merchandised at a *merchandising* profit. In other words, if the gas company sells it at all, it does so to set a quality standard at which dealers in that community can aim. And by the same token it creates the opportunity for others to engage profitably in the gas ap-

**It is obviously good business for us to lend our efforts toward making the gas appliance sales business profitable for anybody with capital and ability who will go into it.**

**We have everything to gain and nothing to lose by so framing our merchandising policies and arranging our plans to encourage the dealer.**

pliance selling business.

The question of "trade-in" allowances is one that needs real thought. A trade-in allowance is one of two things. It is either a business inducer, or it is an indirect way of cutting a list price, or it is both. It would be foolish to say that it should be completely eliminated, so long as it has definite merchandising merit. The thing to do is to eliminate the uneconomic practices that have been going with it, and use it to build net profit into the sale of any particular appliance and not as a weapon for cut-throat competition. The practice of trade-in allowances, both in and out of our industry, has been very much overworked. Excessive trade-in allowances have wrecked many an automobile dealer. The problem from our viewpoint is not how much business we are getting away from our appliance-selling competitive dealers primarily through its use, but how many would-be trade allies we are keeping out of the picture. If a percentage or fixed trade-in allowance can be arrived at, mutually satisfactory to our local members of the trade associations who have endorsed these principles, then and only then will there be full encouragement extended for active sales effort on their part.

**There is only one way to be fair in this. If we feel that to secure a wider distribution of a certain appliance, longer terms are necessary than the dealer can afford to offer, then we, in all fairness, should make those same terms available to the dealer by agreeing to discount his paper.**

At this point I should like to comment on the subject of salesmen's compensation. From the standpoint of sound dealer relations, the merchandise salesmen's compensation plan of the average gas company is subject to very definite criticism. Emphasis should be on the total number of standard units connected to the system, rather than on the number of units sold by the utility's merchandise department.

The measuring stick of the effectiveness of a utility sales department should be the increased load that its own efforts, *plus* that of the dealers, bring to the company, and conceding that it may be impractical to adjust compensatory schedules immediately to this end, the trend should be in the direction of taking the emphasis off the volume of merchandise sold at retail and placing it on the total number of standard units connected to the system.

*"The presenting to the public of those appliances not having received reasonable customer acceptance shall be considered as promotional activities and not as merchandising activities."*

We merchandise with one goal in view—the maintenance and development of our load. We believe that we are justifiably in the merchandising business for two reasons:

(1) To establish and maintain a quality standard.

(2) To pioneer new uses and applications for using our service.

I have already discussed briefly the maintenance of an appliance quality standard in our territories. The question of pioneering new uses for gas is another matter. It is fundamental in utility merchandising that the easiest and most profitable appliances to sell bring us the least load. The fact that an appliance brings a new domestic application for gas with it implies a selling cost far greater than the gross profit from the sale.

### WHAT IS "PROMOTIONAL" SELLING?

For example, the direct sales expense in salaries alone in one gas company during a campaign some six years ago to popularize the self-action water heater, was approximately $77.60 per unit sold. This figure did not include such indirect selling expenses as supervision, advertising, bookkeeping, collecting, etc. The job had to be started, however, and the initial distribution of that year has opened the gates to the sale of thousands of self-action water heaters in this same company's territory. It is very obvious that no dealer could absorb such an expense in pioneering a self-action water heater, nor could any utility sales department profitably do it, strictly as a merchandising operation.

These dealer associations thoroughly appreciate these facts, and they admit our right to consider such operations as promotional and not merchandising. The problem, therefore, is to distinguish between what is merchandising, and what is promotional. This, again, is a matter for local definition. I can readily see how a gas range, in most instances, is a merchandising appliance, but in a community where gas service has recently been made available under highly competitive circumstances its sale is entirely promotional. One utility merchandiser, when asked what was the border-line between merchandise as such, and promotional equipment, replied that the appliance was promotional until you saw it on display in a department store. This was his way of saying that a department store never can afford to handle anything until a demand has already been created for it. After all, it is all a case of what the local saturation is and no one is in a better position to know what that saturation is than the local utility sales executive.

*"Co-ordinated advertising of approved appliances should be developed by gas utility companies and local dealers, and the gas company should give all reasonable assistance possible to the dealer in advertising, displays and sales assistance."*

In that most utilities are doing this now wherever there is any organized form of co-operation, this point requires no amplification.

*"The deferred payment feature of our merchandising activities shall be on an economically sound basis."*

Let's examine this in detail. First, there are economic limits in retail time payment terms from a strictly merchandising viewpoint. We, because of the load, in addition to the merchandising profit, can from a utility viewpoint, afford to stretch the economic limits beyond those that are sound for

**The future sales program must be developed in harmony with certain fundamental principles of trade relationship that are rapidly becoming nationally recognized.**

the private merchant. In doing so, however, we are using our utility position to create a merchandising condition with which it is bad business for the dealer to compete.

To my mind, there is only one way to be fair in this. If we feel that to secure a wider distribution of a certain appliance longer terms are necessary than the dealer can afford to offer, then we, in all fairness, should make those same terms available to the dealer by agreeing to discount his paper.

The A. G. A. principles of merchandising are offered as a general suggestion for localized adaptation, and is a prelude, as it were, to what I believe to be a far more important side of happy trade relations. At first, our attitude was purely protective. Our mental attitude has now passed that phase, and I think most of us are taking the constructive viewpoint, which is that we should further our dealer relations because it is good business.

It seems fundamental to me that the more people that are engaged profitably in any business, the more aggressively will that business be developed. Also, so long as there is a more profitable opportunity for capital in the business, there will be a higher type of personnel attracted to it.

We in the gas business are vitally interested in the sale of gas, and this is possible only through the sale of gas-using equipment. It is, therefore, obviously good business for us to lend our efforts toward making the gas appliance sale business profitable for anybody with capital and ability who can be induced to go into it. It is a common complaint that dealers aren't merchandisers. If that is true, I can only say that they never will be until the business is made more profitable either for them to afford to be more aggressive, or to induce men who *are* merchandisers into the dealer ranks. Let us ask this hypothetical question: If dealers were aggressive, if they were good merchandisers and conducting their gas appliance sales according to the A. G. A. principles we have just discussed, would they, or would they not, be helping us to build our load?

**As a staunch believer in the value of gas appliance merchandising from a utility viewpoint, I am just as convinced as I ever was that the gas company should continue to merchandise, but in such a way that our trade allies can thrive and not be stifled by our efforts.**

The answer is obviously "Yes." If that is the case, why isn't it good business to frame co-operate policies and put into practice plans that are constructively promotional to this end. In other words, why not help the dealer to make more money on the sale of gas appliances than he can make on other fuel-using equipment?

As a staunch believer in the value of gas appliance merchandising from a utility viewpoint, I am just as convinced as I ever was that the gas company should continue to merchandise, but in such a way that our trade allies can thrive and not be stifled by our efforts.

**From the standpoint of sound dealer relations, the merchandise salesmen's compensation plan of the average gas company is subject to very definite criticism.**

With one or two outstanding exceptions, the dealer, generally speaking, has shown no evidence that he has the ability or desire to do the load-building job that we have done or are doing. At the same time, we must realize the great advantage to us that would accrue if he could be built up and encouraged to do a similar job. Whether he ever will be able to do it is problematical. However, we have everything to gain and nothing to lose by so framing our merchandising policies and arranging our plans to encourage him to do so. The final answer is not one of so-called ethics but of economics, and it is along these lines that our trade relations must be developed.

**The use of gas in the home has always been the backbone of our business and the domestic field is still our greatest potential market.**

In the final analysis, our business is more than a gas utility selling a service to our customers, and with a sales department selling certain manufacturers' products to foster the use of that service. Like every other industry, our industry includes every branch that has a potential profit in successful growth. Co-ordination of ideas, synchronization of effort all along the line are ideals that mean added strength to every branch of our industry, and when all is said and done, isn't that what we have in mind when we talk of trade relations?

Broadly speaking, any individual or group of individuals who benefit from the use of its service, while not directly in the service end of that industry, are an important factor in its existence, and certainly any individual or group of individuals who are profitably engaged in it, are integrally in the gas business whether they be the manufacturers who make and distribute gas-burning equipment, jobbers, retailers, or employes of these jobbers and retailers.

The manufacturers of quality equipment have an important place in this picture, and any utility policy that restricts opportunities for *all* manufacturers of quality equipment in any particular field is restrictive as far as the better interests of the utility are concerned. Unfortunately, such restrictive conditions do exist. For example, the utility, by limiting its efforts to the products of one or two manufacturers, throws an undue proportion of the total business available to those particular manufacturers, and at the expense of those other manufacturers who are both willing and able to do a job, provided they had the same advantage as the two selected by the utility.

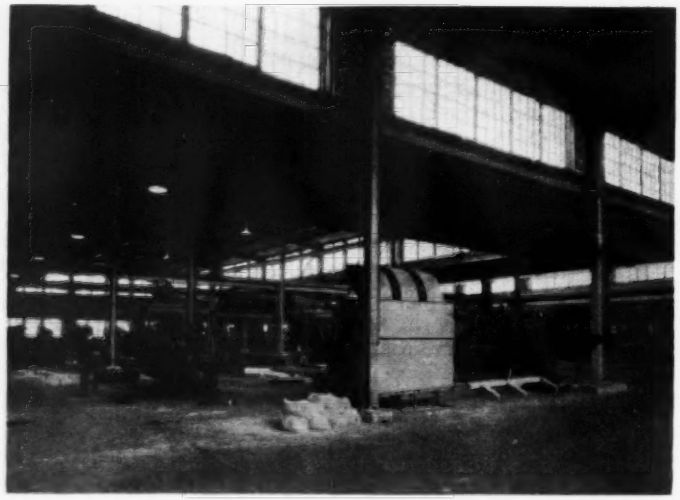
### ADVERTISE TO THE DEALERS

The broadening of the field will also broaden the scope of the manufacturers' advertising and through the medium of trade magazines published primarily for allied trades bring the story of gas service and the possibilities for the sale of gas equipment to these trade bodies. I commend this thought to both manufacturers and utilities.

A broadening of the field even at the comparatively insignificant sacrifice of merchandise sales volume will bring additional installation and service work to allied trades and thereby further strengthen the gas industry.

(Continued on Page 105)

# How a Unit Heater



*Here is a representative unit heater installation which is of the type having a recirculating cabinet*

THE experience described in this article serves to illustrate how baffling some trouble jobs may be.

A short time ago, blue-prints of a building were sent to us, and from them we prepared an estimate of heat losses. Unit heaters were selected to do the actual heating and a diagrammatic lay-out was drawn to indicate the number, size and locations of the units. This was during hot summer weather and early in September, the system was installed so that it would be ready for operation in good season before needed.

Early in November we received a letter, advising us that something was very much the matter. Of the eight units (three on the first floor and five on the second or top floor), only four would deliver warm air.

Immediately we began to examine the various possibilities, such as traps of insufficient size, inoperative traps, improper piping, air binding, insufficient steam, etc. By the process of elimination we arrived at the conclusion that the cause of the trouble must be an insufficient supply of steam

### HOW REASONING WAS EVOLVED TO SOLVE PROBLEM

Our reason for eliminating the possibility of under capacity traps was that if four of the eight units delivered heat, the traps on these four must be somewhere near the right capacity. Since all the units were of the same size, it was highly improbable that different size traps had been used. It was of course possible that the traps on four of the units were not functioning properly, but it seemed unlikely that four out of eight traps would be dirty or defective. If there had been only one or possibly two units failing to heat, the possibility of the traps not functioning would have been considered more seriously.

We then wrote, giving "Insufficient Steam" as our analysis of the trouble. We were not in a position to give the cause, as there were several possible causes, such as boiler of insufficient size, poor draft, under-sized piping, poor grade of fuel, improper firing, etc.

Our suggestion was that to prove the correctness of our theory the steam supply to seven units should be shut off and the full steam capacity of the plant should be turned to the eighth. If this unit performed as it should, the steam to it should be shut off and directed to another unit—and so on until all eight units had been tried.

A few days later we had a report that any one of the units seemed to function properly with all other units closed off but there was a terrific water hammer in the system whenever the supply valves to most of the units remained closed. There was some agreement with our analysis that insufficient steam was the real seat of the trouble. Those on the location set about to check the steam generating plant.

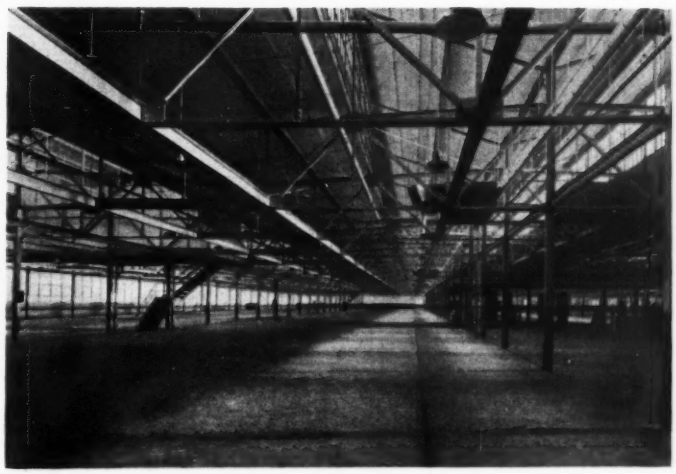
First, the contractor who had selected the boiler and made the heating installation checked his heat loss calculations, which were made from the actual building and not from the blue prints. He found that the boiler was of proper size to deliver sufficient steam to heat the building. He checked his pipe sizes and found that they were ample for the steam capacity of the boiler, and expressed the opinion that insufficient draft and poor firing might be responsible.

Next—the general contractor who had built the stack was called in. During the investigation it developed that the stack was slightly smaller than was recommended by the boiler manufacturer for the particular size boiler installed, but all agreed that this slight difference could not possibly be responsible for the seemingly serious shortage of steam. Likewise, all present agreed that the fireman and the grade of fuel used were as good or better than average, so the method of firing and grade of fuel were eliminated from the list of suspects.

When all of these investigations were completed, the owner was little better off than he was at the start. First it had been demonstrated that any unit would deliver heat when sufficient steam was supplied to it. Second, the heating contractor had made sure that the boiler was of the proper size for the building. Third, the general contractor, heating contractor and boiler representative

# Trouble Job Was Solved

By C. D. GRAHAM



*Note that these unit heaters are arranged to blow in the direction of the exposed side-wall areas*

agreed that the draft could not be responsible; and finally there was no criticism of the method of firing or grade of fuel.

As a last resort, an appeal came to us, and we decided one of our engineers should go down and see the installation and try to locate the real trouble. Next morning he was at the job.

First he looked at the piping. It appeared under-size for the units and also was so arranged that it was almost impossible to throttle the steam to any unit because the main was at the ceiling of the second floor and all risers to units were taken from the bottom of this main. The risers themselves were not dripped. Consequently, when the valve in the supply to any unit was closed, the condensation backed up until it filled the riser. This was equivalent to having no drip provision on the main and the result was water hammer.

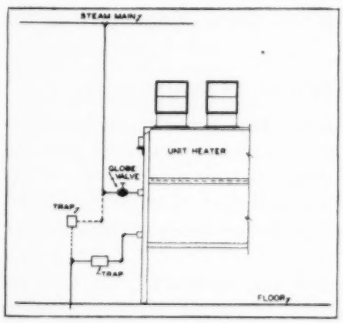



*Fig. 1—This shows the piping connections which were the cause of the unit heater difficulties. The dotted lines show the new connections. Note that they drain the steam supply line when the unit heater is valved off*

Next, he compared the building drawings which had been sent us, with the building as constructed, and here was the answer to the whole problem. The drawings from which our heat loss calculations had been made showed the roof construction as 1-in. sheeting with composition roofing. No false ceiling of any kind was indicated. Actually, the second floor had a false ceiling of ½-in. insulating board and on the under side of the roof joists was another ½-in. of insulating board. Thus, the insulating value of the two air spaces and 1 in. of insulating board was present but had not been figured in sizing the units. The roof loss on our original estimate was greater than all other losses combined, so that the addition of this insulation actually reduced the amount of heat required approximately 50 per cent.

### FINAL CHANGES IN CONSTRUCTION GIVE KEY TO SOLUTION

It was learned that the building (with the exception of the heating system) had been completed in the early summer and they had found it so hot on the second floor that it was necessary to insulate the roof. Obviously it was a considerable relief for all concerned to learn that over capacity units was the trouble and that everything could be corrected by a few changes in the piping.

A drip was installed at the base of each riser, as shown in Fig. 1. With these revisions it then was possible to throttle any of the units as much as required to distribute the available steam evenly to all units without water hammer.

A week or so later we received a letter stating that the changes in piping had been completed and at last all was well.

This example is an unusual case, but serves to picture how baffling an "Insufficient Supply Steam" can be, and also illustrates how important it is to take all factors into consideration when analyzing a trouble job.

When this trouble is encountered, frequently it is difficult to make the proper analysis at a distance. By that it is meant that even though it is apparent from the nature of the trouble or wording of the complaint that lack of steam is the reason a unit delivers cold air, it is often hard to advise what steps should be taken to overcome the difficulty without actually visiting the job.

If it had been possible to visit the job at the start of the work, all of the conditions would have been brought out with a consequent conservation of time and effort on the part of all concerned. Also, if those describing the difficulty had been more explicit, it would have helped,

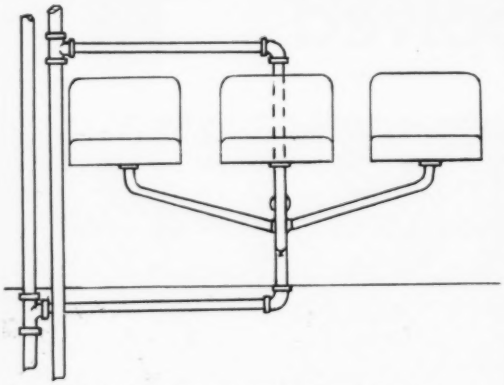


*Fig. 1—This shows the method of connecting three wash basins which is recommended by the Hoover code. A single trap serves all three fixtures.*

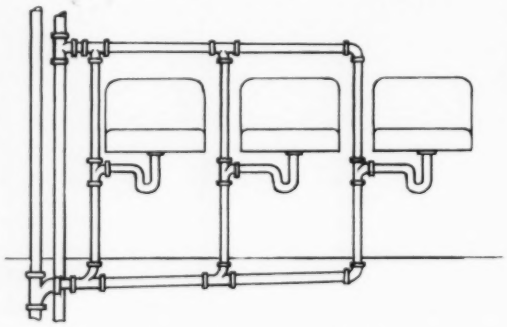


*Fig. 2—These connections are the farthest removed from those recommended in Fig. 1. While these are perfectly satisfactory, they involve more work than is necessary to a good job.*

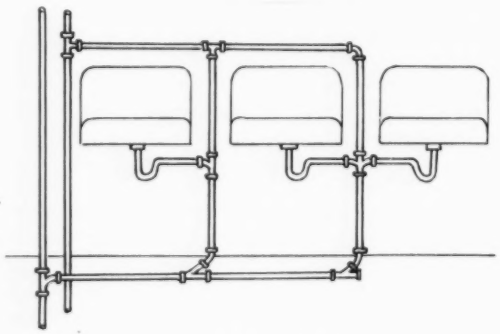


*Fig. 3—These are the preferred connections. Notice how the one vent serves the two end fixtures. This shows a reduction in the piping and connections used in Fig. 2.*

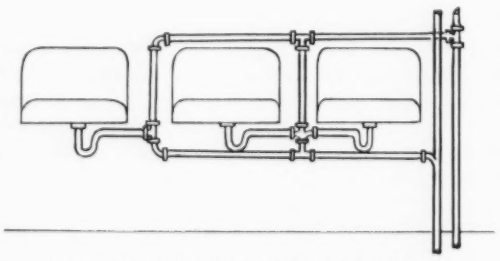


*Fig. 4—A modification of the connections shown in Fig. 3 are those illustrated above. The two are identical except for the horizontal waste line which is raised above the floor in this case.*

# Contradictions

***Why is it more correct to connect three wash basins into one trap than to do the same with three kitchen sinks or three bathtubs?***

THE Hoover code has provided for the connecting of a group of three lavatories in the following recommendation—

"Each fixture shall be separately trapped by a water-seal trap placed as near to the fixture as possible, except that a set of not more than 3 laundry trays or lavatories or a set of 2 laundry trays and 1 sink may connect with a single trap, provided the trap is placed centrally and the branches connect into the trap seal at an angle of not more than 60 deg. to the vertical arm."

Not all of us agree to this, even though it has the stamp of approval of so excellent an authority as the Hoover commission.

### DIFFERENCE IN OPINIONS

This particular question has probably aroused as much discussion in the past as almost any other question relating to plumbing practice.

Perhaps as many would be found "for" as "against." However, we think it will be profitable to discuss the question.

Our immediate interest in this particular point of practice is prompted by the recent receipt of the following letter from a prominent plumbing contractor:—"Why is it any more correct to connect a set of three wash basins into one trap than to do the same thing with three kitchen sinks or three bath tubs? The Hoover code would allow the basins to be so connected but not the other fixtures. What is your opinion?"

With us it is not so much a question as to whether we believe it good practice in the case of one fixture and not in the case of the others, as to whether it is advisable for any fixture. Our opinion, freely expressed, is that as far as possible, every fixture should have its own individual trap. In taking such a stand as this, however, it does not mean that we are not in favor of simplification of waste and vent connections.

Fig. 1 shows the method recommended in the Hoover code.

Fig. 2 shows connections furthest removed from those shown in Fig. 1. While the Fig. 2 connections are perfectly O.K., they would not be our choice under condi-

# in Plumbing

By A. J. Parks

*Fig. 5—The connections at the upper right represent poor practice. It allows an undue amount of exposed foul waste pipe*

*Fig. 6—A number of cities apparently recommend circuit or loop venting for even three fixtures. The principle correctly applied is shown in the second figure at the right*

tions which generally obtain. We would prefer connections of the general type of Fig. 3.

As we have often said in the past, we cannot afford to tack onto the plumbing system any features that add to its complexity. It should be our aim to make the plumbing system as simple as possible while at the same time making it 100 per cent effective and efficient.

Never should anything be done which adds expense and complexity to the plumbing system without returning an equivalent in actual practical service.

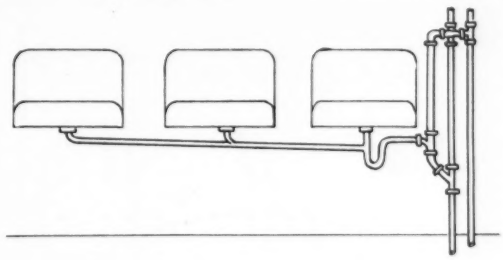
A modification of the connections of Fig. 3 are those of Fig. 4. The two are identical except for the raising of the horizontal line above the floor in the case of Fig. 4.

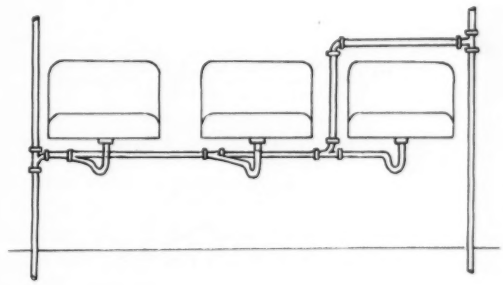
The question as to why we do not take kindly to the Hoover code recommendation that three lavatories use one trap in common is a fair one. The answer is a simple one. In the first place it is too much work for one trap. In the second place we feel that every plumbing fixture deserves a trap which is not shared with any other fixture. When this trap which is common to the three fixtures becomes clogged, three fixtures are out of commission. In our opinion the clogging of a trap should not affect more than the one fixture to which it is connected. A third argument may not seem a particularly strong one, and yet it has some weight, at least. When such connections are made as shown in Fig. 1, the waste line running to each of the two end fixtures will be considerably longer than usual, and this extra length of pipe will present just so much more fouled surface to throw off objectionable odor into the room.

### HOW PILOT DRAWINGS HANDLE SUBJECT

The last named argument probably is of least account, but nevertheless it covers one of those numerous small points which combine to produce the well-nigh pure atmosphere of the modern toilet room. The only argument we know of in favor of using one trap for three lavatories is the fact that such a job can be produced for less money than other and better methods call for.

We are always entirely in favor of cutting down cost of production when that process is not accompanied by





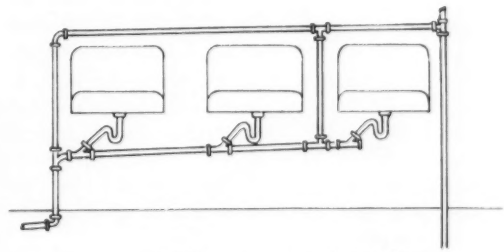


*Fig. 7—Immediately above, traps of the ¾-S type should never be used. The flow of air cannot possibly be as effective as in the use of P-traps*

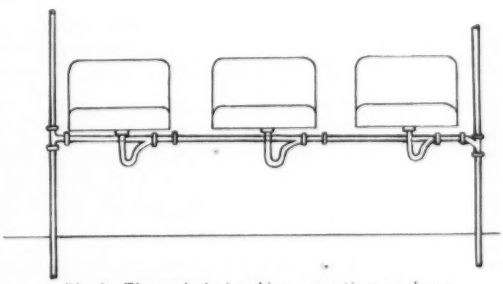


*Fig. 8—The method of making connections as shown above is open to very serious objections. A stoppage may cause the waste to flow out the vent*

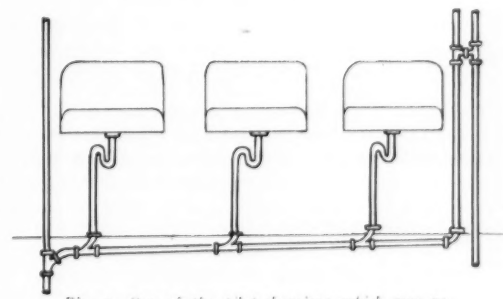


*Fig. 9—One of the pilot drawings which was referred to in developing this article recommended connections such as these*

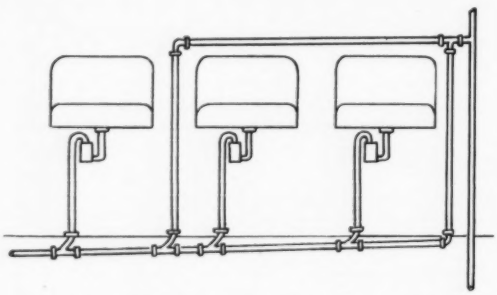


*Fig. 10—In this case, siphonage cannot possibly be overcome by admitting air far down on the long or outlet arm of the siphon. Accordingly, this venting is not effective*

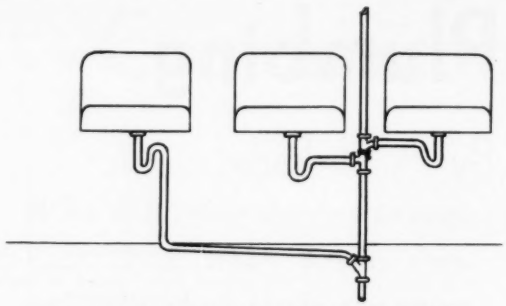


*Fig. 11—Another pilot drawing registered approval of these connections. The left hand fixture piping forms a perfect siphon. It has no protective features*

the cutting down of efficiency and sanitary excellence.

After we got started on this subject of connecting three lavatories, we felt it would be helpful to see how the matter was handled by various pilot drawings to which we have access. Our search through these pilot drawings brought to light many different views on the subject we are discussing, and a number of the most interesting layouts we are showing in our illustrations.

By far the greater number of pilot drawings, which show approval of the use of the one trap, show connections like those in Fig. 5, in which the trap is placed under one of the end fixtures.

Our objection to this plan has already been voiced. We think it a poor method, in that it allows an undue length of exposed fouled waste pipe.

We understand fully that where much hot water is used, such connections may not result in objectionable conditions, but as a general proposition we think there will be many that will agree with our position.

We found quite a number of cities apparently recommending circuit and loop venting for even as small a group of lavatories as three.

Fig. 6 shows this principle correctly applied.

We are not prepared to say that we favor this method in all cases. There are certain conditions that have to be met before the method of circuit venting for elevated fixtures can be expected to perform correctly.

It is obvious that in this type of venting the main horizontal waste line besides carrying all the waste from the three fixtures, must also convey to each trap a proper supply of air to overcome any tendency to siphonage. This means of course, that the size of the main waste must be sufficiently large to carry the waste and still allow sufficient room in the upper part of the pipe for the air supply to travel.

Not only must this pipe be of sufficient size, but it must not have too sharp a grade. If the grade is so sharp as to send the waste in a rush to the far end of the pipe, it is in danger of becoming filled or so nearly filled that air passage will be interfered with.

### CORRECT METHOD IN CIRCUIT VENTING

In the circuit venting of lavatories, as in the circuit venting of water closets, the only correct method is to connect the trap outlet horizontally into the main waste line. Therefore P-traps must be used. Traps of the ¾-S type, such as seen in Fig. 7, should never be used. The flow of air to the traps cannot possibly be as effective as in the use of P-traps.

Fig. 7 presents rather a peculiar situation.

In the other instances where circuit or loop venting was used, a waste stack was shown at one end of the line and the vent stack at the other end, both stacks passing through the roof. Under such conditions, a good circulation of air through the main waste line might be expected. This is not the case in Fig. 7, and so apparently in order to overcome this deficiency, the discharge end of the main waste was connected with the circuit vent. This was in the nature of a relief vent. No doubt this was the best that could be done under the circumstances, but we would expect the more common plan of connecting would produce more positive results.

### WRONG PRACTICE POINTED OUT

One method that was noted, and which is open to very serious objection is seen in Fig. 8. Instead of carrying the circuit vent above the fixtures before connecting it into the main vent line, the vent extension was made horizontally into the main vent line. Any slight stoppage or even temporary obstruction in the horizontal line would crowd the waste back and allow it to discharge into the vent line.

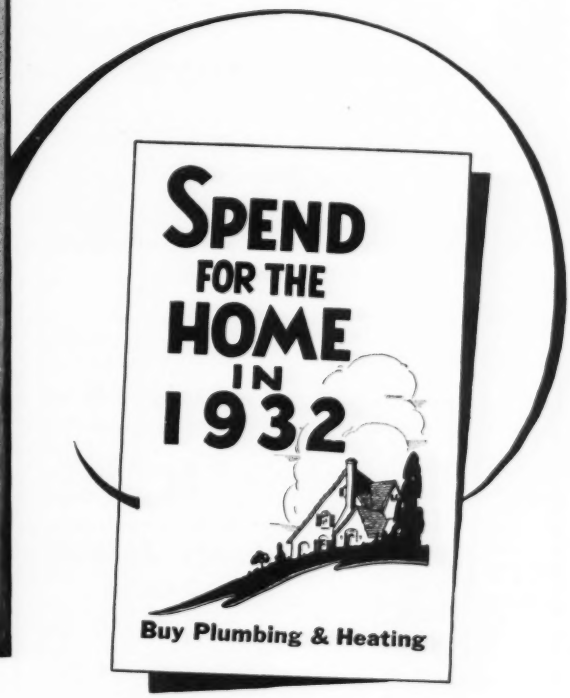
One of the pilot drawings that we saw contained the connections as given in Fig. 9 and another as in Fig. 10.

We have many times in the past taken occasion to criticize this method of venting. Actually and practically, the fixtures are not vented. The vent piping might just as well be thrown away.

As a matter of fact, siphonage cannot possibly be overcome by admitting air far down on the long or outlet arm of the siphon. Would one ever expect to prevent a range boiler from siphoning by putting a vacuum valve at some point in the cellar on the supply to a second floor range boiler? That would be along the same line as this attempt to prevent siphonage of the traps in Figs. 9 and 10.

And yet we can name a considerable number of large and fair sized cities that are adhering to this practice.

Still another pilot drawing showed the connections illustrated in Fig. 11.




# PLUMBING & HEATING MERCHANDISING

THE photograph above shows some of the publications which are carrying copy on the "Spend for the Home in 1932" campaign. There are a few additional papers of which copies were not available—but the bulk of them is shown above.

In the pages which follow is shown what plumbing and heating contractors—and some wholesalers and manufacturers—are doing with the campaign. There is given also a list of about three hundred newspapers all over the country which have received the first release for the public on the "Spend for the Home Campaign." We urge contractors in those cities listed to see to it that the material is published. Contractors in cities which are not listed may write us for a copy of the publicity release and we will send it, to be handed to newspapers in their communities.

If you have not as yet enlisted in the growing army of those who are profiting by the "Spend for the Home in 1932" campaign, do so now. Full details will be found on Page 16.

Do your bit to bring back Prosperity

Help stimulate Industries by buying the things you need

**NOW**

Don't spend another cent for repairing an old closet outfit. Replace your present closet with this high grade combination.

Installed complete **$25.00**

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BOTH
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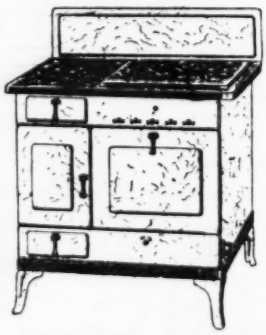
KEEPS HOT WATER HOT AND SAVES FUEL

Uninsulated Tanks Waste ⅓ of the Fuel

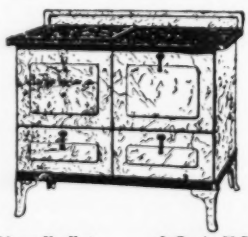
30 Gal. size — $7.50
40 Gal. size — $8.25

Ask for particulars on this money Saver.

**Detroit Jewel Gas Ranges**



Sparkling new table-top ..... **$51.50**



New Buffet model ..... **$34.50**

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Plumbing - Heating - Roofing and Sheet Metal Work



*Let's make 1932 a "Home Year"*

**The American people are, we believe, through with the era of frenzied living and spending, and running. Let's concentrate on the home in 1932—the best investment possible, and certainly a source of courage in facing the difficult tasks of bringing prosperity back to the country. With new interest in home life, with more comfortable and convenient homes, the American business man and woman will go to his or her job in a more optimistic and effective mood. The home is, as it has always been, the nation's stronghold.**

**Bergen Plumbing Company of Ridgewood, Inc.**

PLUMBING HEATING METAL WORK

71 Chestnut St., Ridgewood, N. J. Telephone 6-0366



**The Difference Between an Old House and a New One is Plumbing**

SPEND
FOR THE
HOME
IN
1932

**Buy Plumbing and Heating**

**J. F. REBER & CO.**

**WHOLESALE**

**Plumbing — Heating and Tinning Supplies**

For this card and 50c, we will replace washers on all your leaky faucetts at any one address.
(You save $1.25 or more)
OLD MAN DEPRESSION
is on the run and we should
"Spend for the home in 1932"
We are making special prices for
Modernizing Plumbing and Heating Systems
Let us give you our estimate at once.
SPRIESTERSBACH PLUMBING & HEATING CO
519 N. Santa Fe Ave
(Day or nite)
Phone 731-W
OLD MAN DEPRESSION

# "Spend for Home" Fits the Times—And Succeeds

OVER half a million circulation—

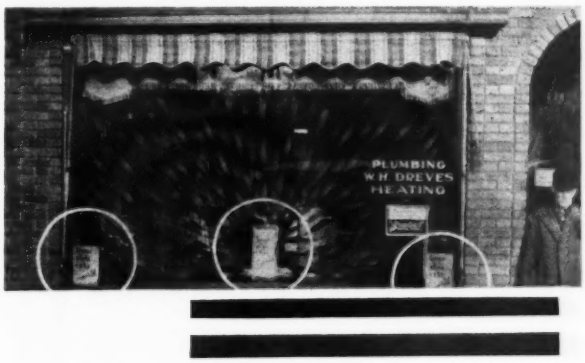
One hundred thousand of the stickers, five thousand of the posters and several dozen of the electrotypes distributed—

Over twenty publications carrying publicity on the movement, and half of them pushing it in their fields—

Expressions of enthusiastic interest and appreciation, and assurances that the "Spend for the Home" campaign is in precisely the right key for this year—

And above all, the instant response of plumbing and heating contractors and their endeavors to put this slogan over in their communities—

These are the high-lights of the report of progress in connection with the "Spend for the Home in 1932" campaign, a preliminary announcement of which we made in our issue of January 9, and which was finally launched in our issue of January 23. In one month and a half the campaign has attained national proportions, is reaching fields as various as plumbing and heating and the jewelry industries, with publicity appearing in publications of almost every type. And during the week of Washington's birthday we released, through the Plumbing and Heating Industries Bureau, the first of a series of newspaper articles which will carry the idea into every corner of the country.




*Three of the slogan posters helping the American Legion campaign*

### HOW CONTRACTORS TOOK HOLD

Hardly was the preliminary announcement made than we began to receive requests for further information from contractors, orders for stickers or posters or anything we might be producing to help the movement, and requests for publicity items which might be handed to local newspapers.

Take the example of Wm. H. Dreves, a plumbing and heating contractor of Elkhart, Ind. We received a rush order for a generous supply of the stickers and posters. Here is his explanation: "We believe that the 'Spend for the Home in 1932' movement will do more to end the depression than any one thing, if all the plumbing and heating contractors in the United States will display the posters in their windows and automobiles, also use the stickers on their mail.

"The American Legion of Elkhart, Ind., are putting on a two weeks' campaign of a war against depression in which they are making a house to house canvass, asking the citizens to pledge the spending of money for repairs or purchases of household equipment.

"In meeting with the Legion Committee we found they had no window cards, so we presented the 'Spend for the Home' poster, which they gladly accepted and agreed to place five hundred in store windows throughout the city, if we would furnish them, which we did, and now the slogan is in nearly every mind in the city.

"This went over so well, we decided to call on the manager of the Gas Company and present the sticker idea to him, to be placed on the gas bills. This plan was approved, and we furnished seven thousand five hundred stickers, which will go into nearly every home in the city.

"Over a period of two weeks, there will be 10,000 'Spend for the Home' stickers used in our city of 8,000 homes.

"At this time we have had three days of the drive and already are noticing a decided improvement in business, with more prospects each day, which to us indicates that the 'Spend for the Home in 1932' seed has been planted in the minds of many people.

"The Elkhart Sanitary Engineers believe the people of our community are ready to spend a great deal of money on their homes, if we can sell them on the idea.

"We congratulate DOMESTIC ENGINEERING on the 'Spend for the Home in 1932' slogan and believe it will go over even bigger than did the 'Bath a Day' slogan."

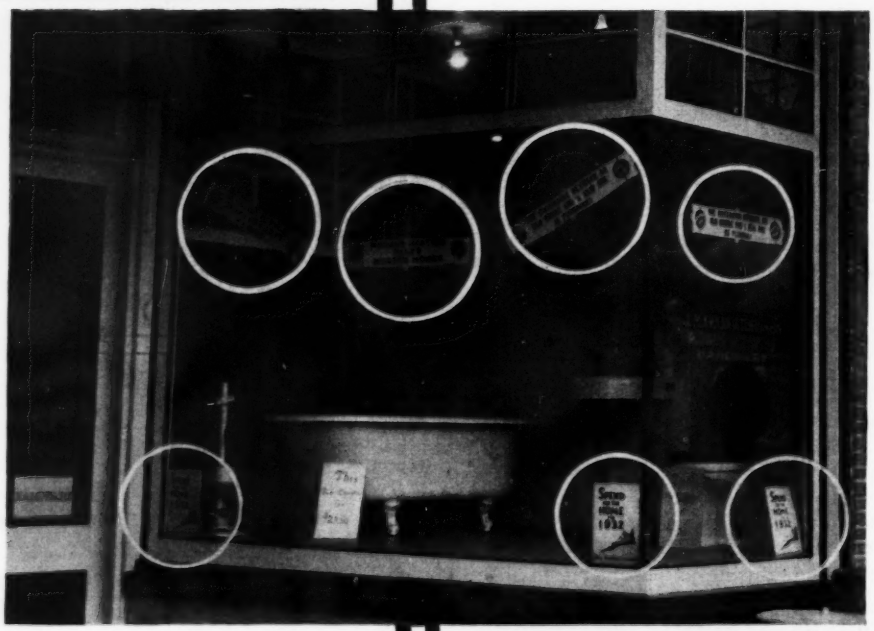
Here is fine proof of the ability of our retailers to make use of a constructive idea in constructive fashion. The two illustrations show how the card is being used in Mr. Dreves' own case.

### USING THE CAMPAIGN MATERIAL

The other two photographs show how J. Marion Wilkinson, a contractor in Easton, Md., has made use not only of the "Spend for the Home in 1932" posters, but of the two earlier remodeling banners we

*How plumbing and heating contractors are using the "Spend for the Home" slogan in advertising. Incidentally, it has been the contractors who have pushed the movement most vigorously*

*Above—A poster on a truck. At right—No one is going to miss these!*



*Below — Another poster travels with a truck*

published. Here is what Mr. Wilkinson thinks about the campaign: "We think his is a very good idea and are using these stickers on every letter and bill that leaves our office. We have also given our competitors a supply of these stickers and posters. If every plumbing and heating contractor will roll up his sleeves and get out and fight behind this idea, the depression will be over with him."

That's the spirit in which the contractors have taken up this campaign—and we call special attention to the fact that Mr. Wilkinson has furnished his competitors with a supply of the materials for putting over the idea.

Moersch & Degnan, Escanaba, Mich., whose activities in competitive merchandising we recently related, have used the slogan cut as shown in the advertising reproduced. Here is what James G. Degnan, of this firm, writes concerning the campaign: "We consider the 'Spend for the Home' movement a very timely one and are of the opinion that it will be successful. Here is one example. The thought of the day is economy and any suggestion

which can be made which is likely to save money for the customer is readily welcomed. We, therefore, think that by stressing the 'Spend for the Home' idea and presenting attractively priced plumbing, heating and allied staples in our advertising, that we will be able to create a reasonable demand for our merchandise. We have had several responses to the ad."

Geo. P. Kiefer of the J. E. Kiefer Plumbing Co., Denver, Colo., writes in characteristic fashion: "'Spend for the Home' is very timely propaganda. It fits in well with the general scheme of things, especially President Hoover's suggestion to stop hoarding and let the sheckels roll out of the old tin cans, shoes, and hiding places, back into things useful for the home. And what is more valuable to an old home than modernized plumbing and heating? It will add dollars to the ones spent and dimes on the investment. If the plumbing and heating industries will get behind this movement and help to put it over, they may be able to help restore that confidence in the general public that is so sorely needed."

Mr. Kiefer is using the two older slogans about modernized plumbing and heating, as well as the "Spend for the Home in 1932" material, and he says that "there are no better slogans than yours."

The Bergen Plumbing Company of Ridgewood, N. J., has made consistent use of the copy which we have reproduced. This was the opening gun in the "Spend for the Home" campaign, and it sums up pretty well the ideas back of the movement.

Note the two other uses of the slogan material. J. F. Reber & Co., of Lewisburg, Pa., use both the old and the new slogans in their advertisement. W. J. Bussey, Jr., of this firm, writes: "We are featuring this campaign in our local newspapers, are using the cards in our display room, as well as distributing these show cards among our trade for display windows and truck use. We feel that by a concentrated effort, both by distributors and contractors on this campaign, it will undoubtedly bring about a number of sales, which otherwise may have been put off, and beyond this feel that it should help to divert some of the plumbing and heating merchandise back to our channels, instead of to the chain stores."

**Over half a million circulation! This is the record of the "Spend for the Home in 1932" campaign up to the present—and it is growing daily**

Mr. Spriestersbach has used his postal card in a humorous way to put over the slogan and to couple it with a clever merchandising offer. The customer is invited to present the card and fifty cents, to have replaced all washers on leaky faucets. There is also the statement concerning "special prices" for modernizing work. In this respect—that is, in tying up the slogan with definite merchandise offers, the postal card resembles the Moersch & Degnan advertisement, which does the same thing.

### SOME ENTHUSIASTIC COMMENTS

H. O. Nelson, president and general manager of Nelson Company of Detroit, Mich., says: "'Spend for the Home' is a very impressive slogan, and if used generously by all branches of our industry, will create a great deal of interest in better plumbing and heating. We are using some of your stickers and will stress the 'Spend for the Home in 1932' suggestion wherever we can, and will carry a short article on it in our monthly house organ for next month. A splendid industry like ours deserves all the help and support we can give it, and surely, with all branches united in a gigantic effort to go forward, the results are going to be much better than we anticipated."

Ray J. Power of The Power's Co., Des Moines, Iowa, writes to say that his company is using the cards at the showroom and on repair trucks. "I believe that you deserve great credit for the idea," he says, "not only from our own industry, but from every industry dealing in home supplies of any sort."

In and around Cedar Rapids, Iowa, there will be a circulation of almost 200,000 for this popular slogan. "Home Ideas" is a publication which is used by contractors and dealers in the building and home furnishing fields to distribute to people in that community, and in an early edition will appear a story, urging these two hundred thousand people to get busy and "Spend for the Home in 1932."

A particularly interesting reaction to the campaign is from the President's Conference on Home Building and Home Ownership. This group asked for a supply of the stickers. "Our purpose," reads the letter, "is to inclose one of these labels with other information which is sent out to various cities interested in modernizing campaigns or other similar activities." There is no need to point out the degree of publicity this will bring to the slogan. And here we might logically mention the fact that the bulletin, "Domestic Commerce," issued by the Bureau of Foreign and Domestic Commerce, has already carried this message to something like 200,000 business men.

### ON THE AIR

Over the radio from a Philadelphia station went the message, spoken by Harry L. Stilwell, a contractor of that city. Reviewing the events of the last two years, and calling for the brand of courage which has developed America to the present time, Mr. Stilwell swung into a spirited statement concerning the campaign, commencing: "The American public is ready to hearken to the message: 'Spend for the Home.'" Mr. Stilwell then reviewed the reasons back of the campaign, and showed how it would unquestionably be "a powerful factor in the revival of business."

With all this momentum being worked up, with inquiries concerning the campaign coming in from all sides, we urge readers of DOMESTIC ENGINEERING to continue to support the movement vigorously, so that in their communities the plumbing and heating angle will be strongly in evidence —will, in fact, dominate. In that way only, can plumbing and heating contractors be sure that the interest which is being aroused in home owners will result in sales of plumbing and heating products.

# These Newspapers Have Received Publicity Item on "Spend for the Home"

Look through the following list of cities. If yours is mentioned, get on the telephone immediately. Talk to the individual whose name or title is given, and ask him when he is going to run the publicity item received through the Plumbing and Heating Industries Bureau of Chicago, covering the "Spend for the Home in 1932" campaign.

After you get his answer on this subject, ask him if he wants further material on this campaign. If he does, you will find further publicity items in the last three issues of "DOMESTIC ENGINEERING" on the first of the two "Retail Advertising Service" pages, which appear in every issue. Send these items to him — and use the advertising copy in your own advertisements. Send clippings to DOMESTIC ENGINEERING.

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Birmingham, Ala.

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Cleveland News,
Cleveland, Ohio.

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Conneaut, Ohio.

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# Heating in Residences and Small Structures

H. L. ALT

continues the consideration of steam heating systems in this, the eighth, article of his series covering modern heating practices

THE method by which the amount of rise in the water line at the far end of the system is controlled will now be taken up and it will be seen just how to ascertain the amount of this rise in every case where a consistent table has been used for sizing the main. Now the list of main sizes given in Table XV is based on one ounce drop per hundred feet of equivalent run. Consequently, if the equivalent length of the main should be 400 ft., the pressure drop would be

$4 \times 1$ oz. or 4 oz.

which is equal to one-quarter pound; it previously has been computed that a difference in pressure between the pressure in the boiler and that in the steam main at the end of the run of one-quarter pound will produce a rise "R" Fig. 31, of 7 in. Allowing 2 in. more to give the necessary head to cause the water to flow back to the boiler will make a total of 9 in. actual rise. If smaller piping is used, this rise will be increased due to the greater amount of friction which will be set up in the smaller line, while if the pipe is made larger the amount of friction and, therefore, the rise of the water will be made less due to the smaller amount of friction in the larger line. This may be proved by referring to Table XIX, which shows the necessary pipe sizes for a friction drop of 4 oz., in 600 ft., of 2/3 oz. per hundred feet. If these pipe sizes are used then the friction for an equivalent 400 ft. run will be

2/3 oz. $\times$ 400/100 or 2 2/3 oz.,

which is 0.166 lb.

and the rise "R" will be

0.166 lb. / 0.43 lb. $\times$ 12 in. or 4.6 in. rise.

Allowing 2 in. more to move the water back into the boiler, the total rise will be 4.6 in. plus 2 in. or 6.6 in., instead of 9 in., as it was when the smaller pipe with the higher pressure drop was used.

The use in the text of the expression equivalent length of run for a steam main means not only the actual length of the pipe but also an allowance for all fittings, valves, etc., which introduce additional friction besides that offered by the straight pipe itself. Table XX gives the allowances for the usual pipe fittings and these allowances are added to the actual length of the main, making

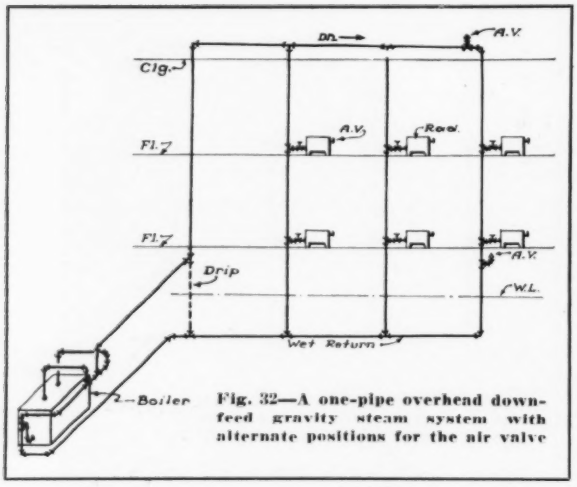



**Fig. 32—A one-pipe overhead downfeed gravity steam system with alternate positions for the air valve**

an equivalent length of main: i. e., this is the length of straight which would produce the same friction drop as occurs in the actual line with the fittings and valves it includes.

When the line is not sized it is usual to allow 100 per cent additional length for the extra friction which will be introduced in the line on account of the necessary fittings, valves, and other interferences which help to retard the steam flow. For example: what equivalent length of run should be used for sizing a main which measures 150 ft. from the boiler outlet to the inlet of the farthest radiator? As the actual pipe size has not yet been determined it will be necessary to estimate the probable equivalent length of run, size from this and then to recheck to see if the allowance made is approximately correct. Usually the length of main is simply doubled to allow for the fittings making the equivalent length of run in this case

150 ft. × 2 or 300 ft.

Now let the fittings be checked up to see if the allowance made was close to what the line actually will have.

Suppose that, after sizing the main on the basis of 300 ft., equivalent length of run, it was found that the fittings between the boiler outlet and the farthest radiator inlet consisted of one 6-in. ell, one 6-in. gate valve, one 6 x 4-in. tee with side outlet, two 4-in. ells, one 4 x 2-in. tee with side outlet, four 2-in. ells, one 2 x 1-in. tee with side outlet, four 1-in. ells and one 1-in. angle globe valve. These fittings would give an additional run of straight pipe equivalent to

| | |
|---|---|
| 1 6-in. ell @ 22 ft | 22 ft. |
| 1 6-in. gate valve @ 9 ft | 9 ft. |
| 1 6 x 4-in. tee @ 50 ft | 50 ft. |
| 2 4-in. ells @ 14 ft | 28 ft. |
| 1 4 x 2-in. tee @ 35 ft | 35 ft. |
| 4 2-in. ells @ 5 ft | 20 ft. |
| 1 2 x 1-in. tee @ 16 ft | 16 ft. |
| 4 1-in. ells @ 3 ft | 12 ft. |
| 1 1-in. globe valve @ 8 ft | 8 ft. |
| Total additional length | 200 ft. |

Adding this to the original length of 150 ft. gives the equivalent length of run of 350 ft. or slightly over that estimated.

One-pipe gravity steam systems may also be arranged in an overhead downfeed scheme as shown in Fig. 32. In this case all the steam is carried to the top of the building in one main riser and the steam distribution main is located at the top of the building—usually in the attic, or in the space over the top floor ceiling. It is necessary to drain the bottom of each riser into the wet return as shown, and as long as this must be done there is no reason for not taking all the runouts from the bottom of the steam main at an angle of 45 degrees and thus allowing the condensate from the main to find its way down to the wet return through the numerous risers. This system has the advantage of having all the steam and condensate flowing in the same direction, which eliminates some noise and permits slightly smaller sizes of pipes; a schedule for downfeed riser pipe sizes is given in Table XXI; some authorities recommend using the same pipe sizes as on the regular upfeed system and, while this can do no harm, it is not absolutely necessary. Any steam pipe sizing schedule based on a total drop not exceeding ½ lb. should give ample sizes for an overhead one-pipe system where the raising of the water in the far end of the wet return can reach 2 ft. without doing any damage.

### BOILER CONNECTIONS

It will be noted in Fig. 32 that on the steam main there are two air valves shown; the one on the top of the system at the end of the steam main is recommended by some authorities, but the one at the bottom of the drop is considered to be in a still better position by others. It cannot be denied that, with the air valve at the top of the system, all the air in the end drop pipe must be expelled through the radiator valve as well as all of the air in the radiator. With the air valve in the lower position the air in the riser will be taken care of by this valve and will not have to force its way out through the radiator air valve. Of course the air valves in the main should be of the quick-vent type or of larger size than the ordinary air valve on the radiators.

Starting the steam main off from the boiler must be done in a correct manner if difficulties are to be avoided later. All boiler manufacturers recommend the use of all the tappings on the top of the boiler with a full size vertical pipe run up from each tapping as high as prac-

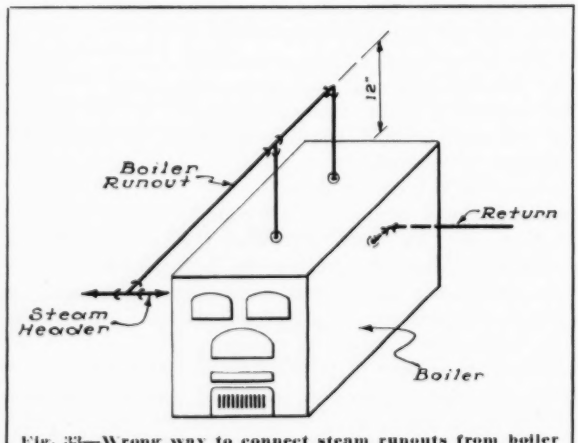



**Fig. 33—Wrong way to connect steam runouts from boiler**

tical in order to allow the steam to flow out of the boiler at as low a velocity as possible. This allows any water contained in the steam to fall back into the boiler; after the steam once turns off in the horizontal pipe any water contained in the steam will go over into the steam main and probably out into the building system. A reducing ell can be used at the tops of the vertical risers so that the horizontal pipes will be one or two sizes smaller and the horizontal pipes, or runouts, can be connected into the main supplying the system or into a single branch supplying this main. Fig. 33 shows the wrong way to pipe up the steam line from a boiler and Fig. 34 the right way.

**TABLE XV**

**Capacity of Steam Mains for One-Pipe Steam System**

| Size of Main Nom. Pipe Diam., In. | Equivalent Square Feet of Steam Radiation at 240 Btu. |
|---|---|
| *1 | 56 |
| *1¼ | 122 |
| *1½ | 190 |
| 2 | 386 |
| 2½ | 635 |
| 3 | 1163 |
| 4 | 2457 |

*It is not recommended to make the end of the steam main at the boiler less than 2 in., and, when the main at the boiler end is over 2½ in. in size, it is not recommended to make the small end less than 2½ in.
Based on 1 oz. loss per 100 feet of equivalent length of run.
Above table from American Society of Heating and Ventilating Engineers' Guide—1931.

**TABLE XIX**

**Size of Steam Main for Drop of Two-Thirds Ounce per Hundred Feet**

| Pipe Size Nominal Diameter In. | Equivalent Square Feet of Steam Radiation at 240 Btu. |
|---|---|
| 1 | 46 |
| 1¼ | 100 |
| 1½ | 155 |
| 2 | 315 |
| 2½ | 518 |
| 3 | 948 |
| 4 | 2011 |
| 5 | 3712 |
| 6 | 6094 |

Note—Above table from Heating and Ventilating Engineers' Guide—1931.

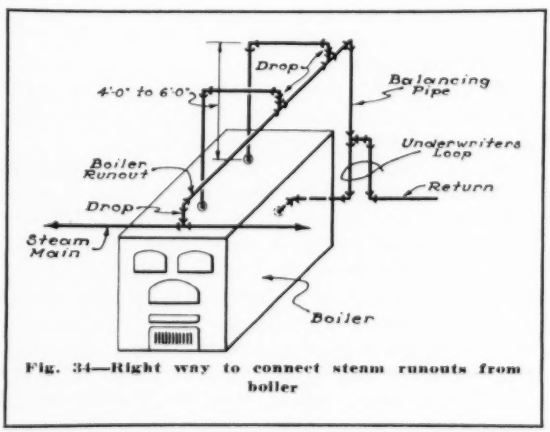



**Fig. 34—Right way to connect steam runouts from boiler**

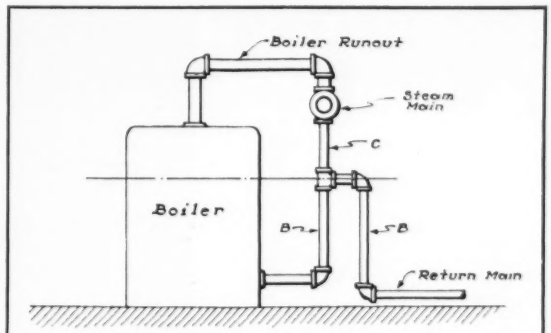



**Fig. 35—Recommended method of installing Underwriter's loop on a single boiler**

**TABLE XX**

**Added Lengths for Fittings, Valves and So Forth in Feet**

| Pipe Size Nominal Diam. In. | 90 Deg. Ell | Side Outlet Tee | Gate Valve | Globe Valve | Angle Valve |
|---|---|---|---|---|---|
| 2 | 5 | 16 | 2 | 18 | 9 |
| 2½ | 7 | 20 | 3 | 25 | 12 |
| 3 | 10 | 26 | 3 | 33 | 16 |
| 4 | 14 | 35 | 5 | 45 | 22 |
| 5 | 18 | 44 | 7 | 57 | 28 |
| 6 | 22 | 50 | 9 | 70 | 32 |

Note—Above table from American Society of Heating and Ventilating Engineers' Guide—1931.

**RETURN CONNECTIONS TO THE BOILER**

Formerly on one-pipe systems the wet return was run back to the boiler and connected into the boiler return tapping without the use even of a check valve; then some steam fitters put in checks near the boiler with the idea of preventing the water leaving the boiler; now the safest method is recognized as the use of the under-writers loop, which simply involves carrying the return line up to a point level with the boiler water line before it enters the boiler and then dropping back to the return

**TABLE XXI**

**Capacities of One-Pipe Steam Risers—Down Feed**

| Size of Riser Nominal Pipe Diam. In. | Equivalent Square Feet of Steam Radiation at 240 Btu. |
|---|---|
| 1 | 56 |
| 1¼ | 122 |
| 1½ | 190 |
| 2 | 386 |
| 2½ | 635 |
| 3 | 1163 |
| 4 | 2457 |
| 5 | 4546 |

(Continued on Page 104)

*Fig. 1—The 8-in. house drain is shown on the basement ceiling. Further details are illustrated in Fig. 7*

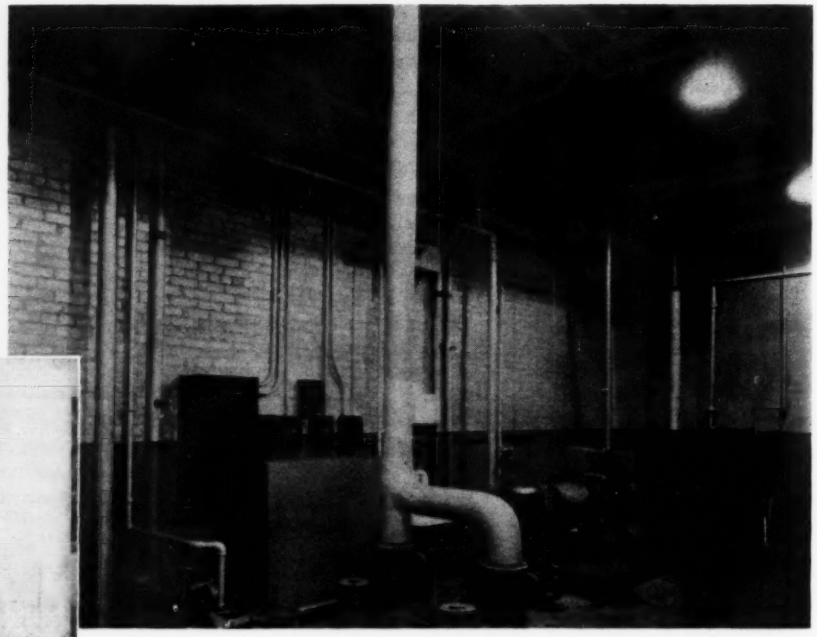


*Fig. 2—This is a close-up view of the utility space between the two lines of water closets seen in Fig. 5. The duct is for the raised rear vent closets*

# Modern Plumbing Telephone

By
R. M. STARBUCK

THIS article covers some of the plumbing requirements that must be satisfied in the modern plumbing system for a telephone building.

Not the least of these problems is the matter of providing comfort and relaxation for the hundreds of women and girls that often work in such a building. Owing to the exacting nature of the work that is required in giving satisfactory service to a most exacting public, there is perhaps greater need of providing for their comfort than in any line of industry we can think of. In the modern telephone building this need has been thought out and supplied in the most satisfactory manner. The meeting of these requirements is reflected in the comfort of the lounging and recreation rooms, and in the sanitary excellence of the toilet rooms.

The appointments of these toilet rooms are complete in every detail. The ventilation is excellent, as also the natural and artificial lighting. The ceiling is high. In fact every point has been covered in providing the best that is obtainable, and at the same time results have been gained without undue outlay.

In Fig. 5 we show the floor plan for a large toilet room on the fourth floor of the telephone building whose plumbing system we are describing. The building in question is the new structure recently completed for the Southern New England Telephone Co., in Hartford, Conn. The plumbing installation in this building is typical in many ways of most other modern telephone buildings now being built in this country.

Fig. 5 shows the fixture equipment of this toilet room to be fifteen water closets and seven lavatories. with an adjacent private toilet room, also shower room containing three showers and a lavatory.

In Fig. 3 a view is given of one side of the toilet room.

In Fig. 4 is given a view looking into the water closet compartments.

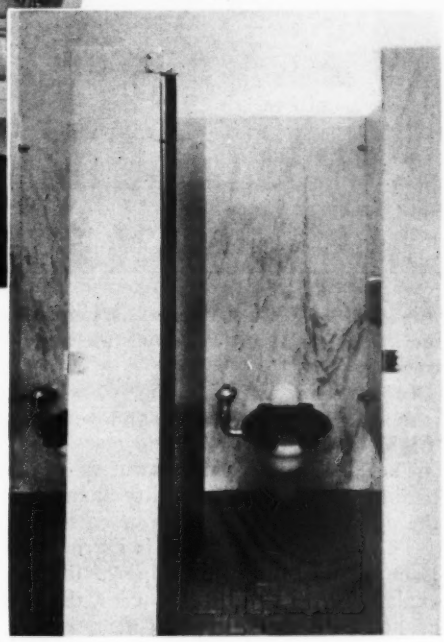
The interesting features concerning the water closets are that they are of the wall type and mounted and supported on adjustable closet chairs.

The two lines of water closets are back to back, with a wide corridor between the two lines, in which are carried the horizontal main lines of drainage, vent and ventilation which serve these fixtures. This feature is clearly shown in Fig. 5. At either end of this corridor there is a door, making the several lines of pipe easily accessible.

A close-up view looking into one end of the utility corridor is given in Fig. 2. This shows a special type of double drainage fitting used on the battery of water closets.

*Fig. 3—At the left is shown a row of lavatories and water closet compartments in the toilet room on the fourth floor*

*Fig. 4—Below is seen the interior of one of the closet compartments. Note the raised rear vent which is connected to the duct shown in Fig. 2*



# Requirements for Buildings

ARTICLE TWO

The water closets are of the raised rear vent type. This is shown most clearly by the middle fixture in Fig. 4. The ventilating passage out of the water closet bowl connects directly into a galvanized sheet iron foul air duct carried in the utility corridor. This duct and the connection into it from the bowl, is clearly seen in Fig. 2.

This type of ventilation was used throughout the building on all water closets and urinals.

The connections from the various fixtures on the different floors branch into three main vertical foul air ducts, 10-in. by 16-in., 12-in. by 14-in. and 16-in. by 14-in., which are carried into three exhaust fans exhausting the foul air through the roof.

When such toilet room ventilation as this receives the proper attention, which it is most likely to get in such a building of this kind, it provides a positive ventilation which results in excellent atmospheric conditions in the toilet rooms it serves.

Circuit venting, or more properly loop venting. was used for these lines of water closets. From each end of the main horizontal soil line, and in front of the last fixture on the line, a loop vent was taken off and corridor back horizontally to a point near the center, where the two lines branch together and are carried vertically. One of the loop vent connections is shown in Fig. 2 and in Fig. 5 near the center will be seen the rising main vent, which rises through a column at the center of the room.

In order to provide flexibility, lead outlets were used on each connection, these being soldered to a brass bushing.

It will be seen in Fig. 2 that the connection from each water closet was made horizontally into the main soil line. This is the correct method of making these connections where circuit or loop venting is used. The reason is that in this type of venting the main horizontal line carries not only drainage, but in the upper part of the pipe there must be space for air to travel, on which the venting depends. When the branch out of the main line points upward or at an angle of 45 degrees, each flushing of one of the fixtures on the line forms a curtain of water across the main at the point where the branch enters. This curtain naturally impedes the flow of air, and if more than one fixture is being flushed at the same instant, this condition becomes still more serious. When the fixture branches horizontally into the main line this difficulty is entirely overcome, and then, if the horizontal is of sufficient size the circuit or loop vent will be operative. Strange as it may seem, horizontal entrance of fixtures into circuit or loop-vented lines is the exception to the rule. Gradually, however, the

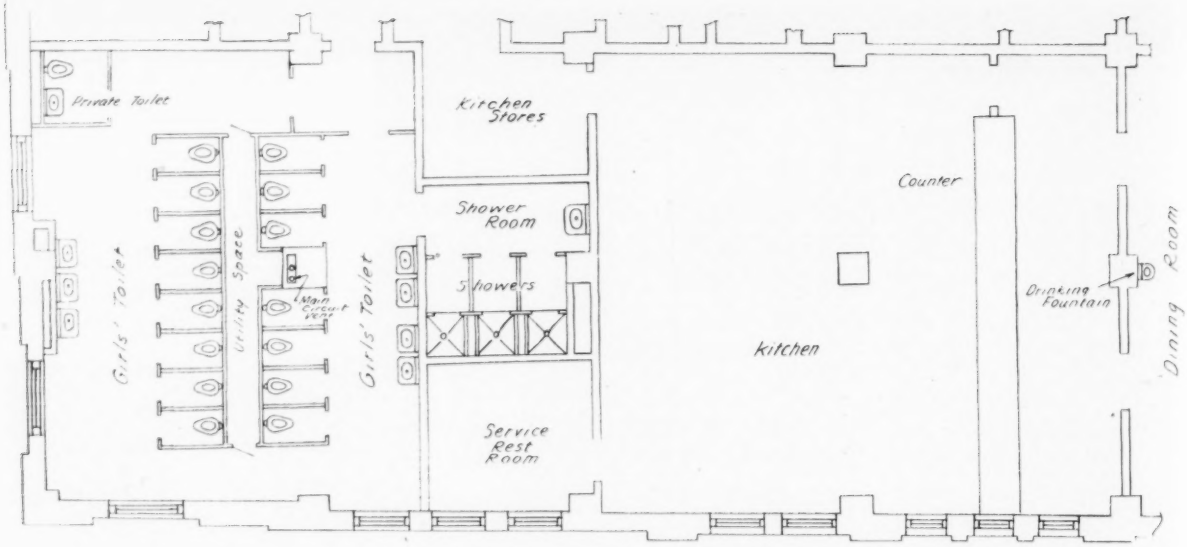



*Fig. 5—This shows the fixture equipment to include fifteen water closets and seven lavatories with an adjacent private toilet room and a shower room containing three showers and a lavatory*

importance of this practice is being seen, and this method is required in many state and city plumbing codes.

In an isometric view, Fig. 6, we have shown the general idea of the waste and vent connections for this double line of water closets.

The broken line arrangement in Fig. 6 is intended to show the idea of the utility chamber which houses the connections for the water closets.

The horizontal soil line is carried above the floor. Each side of the double line of fixtures, as already explained, has its own loop vent, the two loops being brought together at a point near the center.

It will be noted that each of the double waste fittings has a cleanout on each of the two branches. This means that in the event of stoppage, the connection can be quickly and easily freed without the necessity of taking up the bowl. Toilet rooms, and more particularly women's toilet rooms, in such buildings as telephone buildings, are bound to meet such a problem as this, and it is certain that wisdom has been shown in making use of this type of drainage fitting.

To handle the sewage for this building, a house drain 8 in. in diameter is used. This line of pipe is shown in Fig. 1 carried on the side wall of the basement at the ceiling. To protect neighboring apparatus this soil line is insulated.

At the front end an 8-in. running trap is used, with a 6-in. fresh air inlet.

On the soil line serving the first floor fixtures, a back water valve is used, together with a lever-operated quick opening gate valve, to prevent the possibility of roof leaders backing up into the first floor fixtures in the event of heavy rain during flood conditions.

Because of the necessity of running the house drain at the level shown in Fig. 1, to provide gravity discharge into the street sewer, it was necessary to

**(Continued on Page 103)**

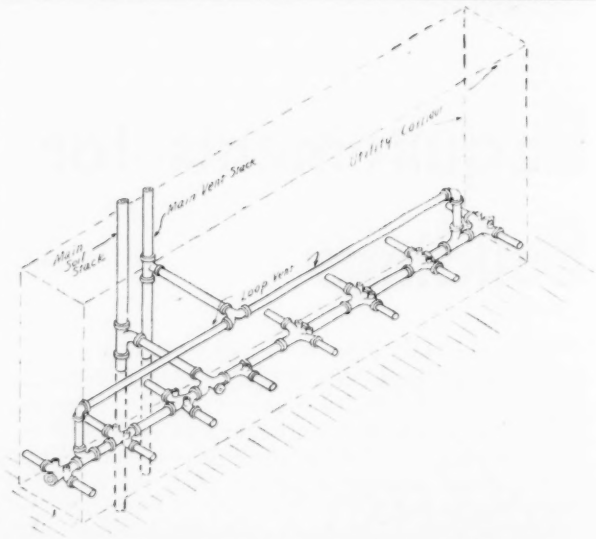



*Fig. 6—In this isometric view, the general idea of the waste and vent connections for the double line of water closets is shown*

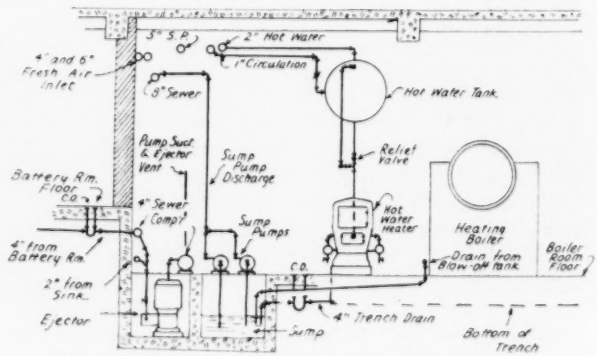



*Fig. 7—This gives a very clear idea of the drainage connections, both clear and polluted, that were installed. Compare with Fig. 1*

# Heating on the Move

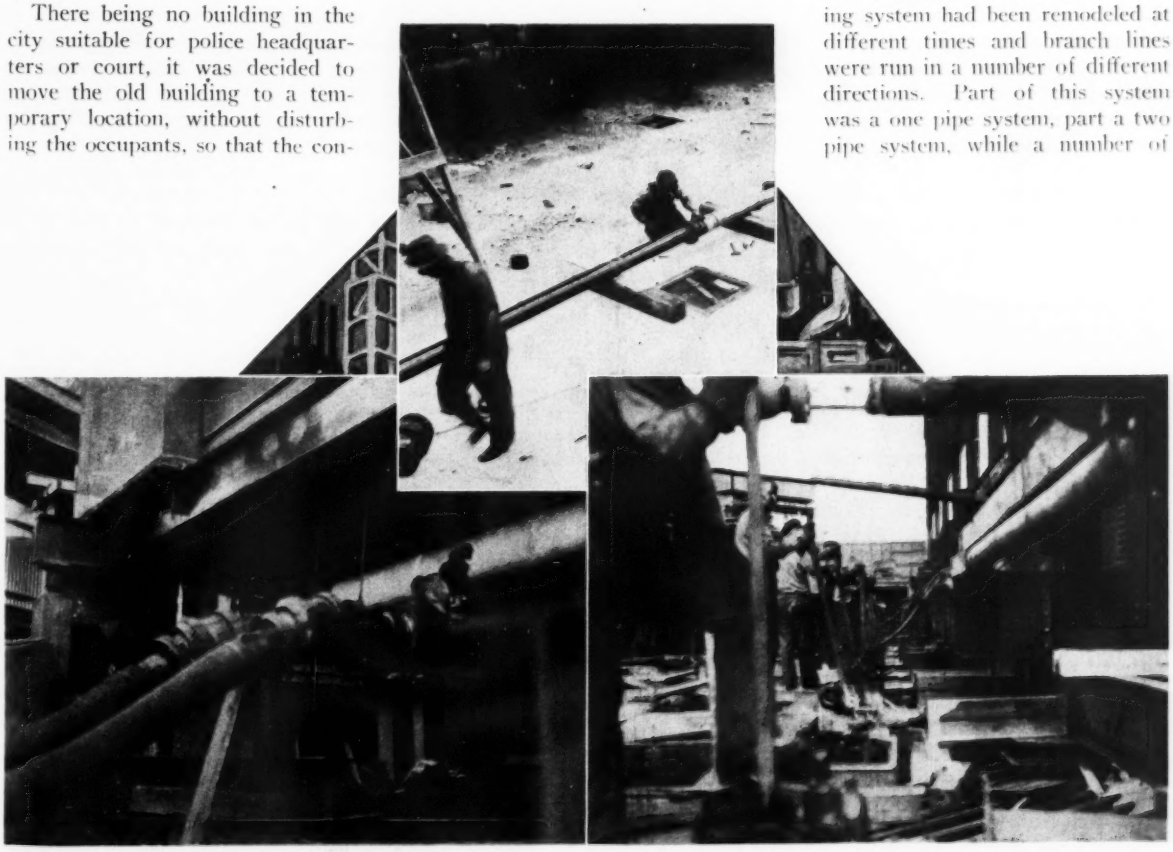
By A. A. HARDING

WITH the increase in attention to municipal and public utility building construction work, recent outstanding examples are considered to indicate what services heating and plumbing contractors are called upon to render. The two examples of work which are described in this article are concerned with the salvaging, at least temporarily, of old structures. The interest lies in the moving of the buildings while occupied and in full service. The requirements were that new structures would occupy the original locations of the old structures.

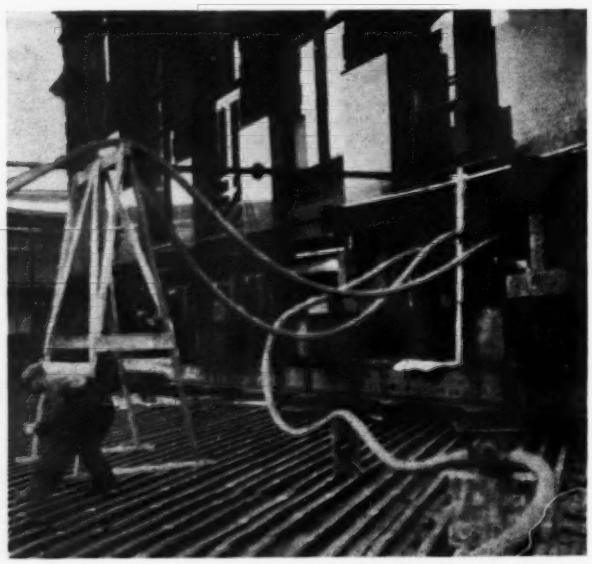
In the case of the old court house and police headquarters for the city of Newton, Massachusetts, it was planned to demolish the building and to erect two new buildings. This work under ordinary conditions would not have been done until spring but the mayor of Newton, who has been devoting a great deal of time speeding up public works of all kinds to relieve the unemployment situation, decided that this work should be done at once.

There being no building in the city suitable for police headquarters or court, it was decided to move the old building to a temporary location, without disturbing the occupants, so that the construction of the new building could be started immediately. The estimated weight of the building was about 400 tons. It was necessary that the fire alarm, police alarm, lights, heating, plumbing, etc., should be kept in operation without interruption.

This article has to do with the heating system. The building is one of a group heated from a central power plant through a 4-in. steam main carried overhead to this building, while the returns are pumped back to an open receiver. After the building mover had taken the weight of the building off the foundation, the steam main was broken and a section of flexible steam hose was connected to the building side of the steam main. This main, which was about 12 ft. above the ground, was dropped down at the power house end to the ground, where a steam trap was placed with a flange connection. The return lines and drips in the basement of the building were broken, and 16 small steam traps were set in place. The reason for the large number of traps used on the return lines was that the heating system had been remodeled at different times and branch lines were run in a number of different directions. Part of this system was a one pipe system, part a two pipe system, while a number of



*These three views show parts of the operations in moving the eight-story Indiana Bell Telephone Company building located at Indianapolis. The top center view shows one of the heating lines being connected to a length of flexible piping. The lower left view shows the flexible connections for the water and gas lines. At the right are eighteen men operating 75-ton jacks for moving the structure*



*These are the water and gas connections showing the flexibility of the lines*

indirect stacks supplied heat for the court room.

When this part of the work was completed, the building was ready for removal as far as the heating contractor was concerned.

On the morning of January 22, with the judge on the bench declaring the opening of court, prisoners in the dock, a crowd in the court room, and the chief of police and staff in their offices, the building started on its journey. When the building had been moved 20 ft., a length of 4-in. pipe with a flange on each end was inserted between the trap and the power house. This hook-up required about ten minutes, so there was practically no drop in maintained temperatures in the building. This operation was repeated time after time, until the building reached its new location, a distance of about 600 ft. The entire moving operation requiring three days.

The temperature in the building at no time during the moving dropped below 70 deg. Fahr., while the temperature outside hovered around the zero mark during the entire time. There was no interruption of any kind in the work of the court or the police department.

When the building was placed on its new foundation, a permanent steam main and return lines were laid in a tunnel, while new return lines were installed under the building.

All temporary lines exposed to the weather were covered with hair felt as soon as laid, over which several layers of tar paper were placed to protect them from the weather.

All of the condensate from the return traps was allowed to waste to the atmosphere while the building was being moved, as this was deemed more economical.

It was the privilege of the writer to be the heating engineer as well as contractor for this undertaking.

Another building which presented many interesting problems and experiences as a result of its being moved is located in Indianapolis, Indiana. It is the Indiana Bell Telephone Company building and the expansion program of the company called for its removal to another location to make way for a new structure.

Considered from a viewpoint of popular interest, the moving of the building which housed the administration and downtown business offices and toll equipment, was perhaps one of the outstanding engineering projects of the year. The building consisted of steel frame and brick construction, eight stories high, with a total weight of 11,000 tons, and covered a ground area of 100 ft. by 135 ft.

The moving operation was made in two stages—the first operation consisted of a straight move 52 ft. south, and the second operation consisted of a turn through an angle of 90 degrees for a total length of 224 ft. During the moving operation the entire personnel of the company occupied the building, together with the regular business carried on with the patrons of the company. The complete personnel consisted of 652 people, and it was necessary to maintain drinking water service, hot and cold water service, electric service for both power and light, sewer service, and heating service. All services were maintained by means of flexible connections, which proved to be every efficient.

The preparation for the moving began about June 15 and continued until October 14. The first move of 52 ft. south started October 14 and was finished on October 18. The temperature from October 14 to October 18 was near freezing, except in midday, and required steam heating in the building each day over the 24-hour period. The building was in constant use; that is, various shifts of employes were at work during the entire 24 hours.

On October 23 the second stage of the moving was started and this was completed on November 12. The temperature during this period dropped as low as 20 deg. Fahr. at times. It was necessary, of course, to dismantle the basement walls for the moving operation, and thus the entire piping system was exposed on the basement ceilings.

Before the new basement walls were built, the tem-

*This shows the heating main which was connected with was constructed on the street side of the curb to make*

perature dropped to zero on November 24 and remained close to zero for approximately a three-day period. During this time tarpaulins were hung around the basement from the first floor line.

During the preparation period for the moving operation, the entire steam distribution system on the basement ceiling was covered with 85 per cent magnesia molded covering 1 in. thick, but the vacuum return piping was not covered. Also, during this period and as a precaution, four unit heaters were suspended from the ceiling of the basement to be used if an emergency arose, the thought being that the warm air could be stratified near the ceiling line to protect the piping. During the zero cold wave on November 24, with the basement enclosed with canvas only, the four unit heaters provided sufficient heat so that no piping of any description froze. The remarkable thing was that the temperature at the basement floor line was very close to the outside temperature, while the temperature at the ceiling line was about 60 deg. Fahr.

During the preparation period two boilers were removed from the basement and connections were made with the heating main of the Indianapolis Power & Light Co. The heating main was located in the parallel with the side of the building, and a manhole was constructed on the street side of the curb. From this point flexible connections were used to make connection with the steam header in the boiler room, the maximum length of flexible connections used being 105 ft. Flexible connections were covered with 2-in. thick wool felt covering, over which was applied two layers of roofing paper securely wired on, to make the covering weather proof.

The steam furnished from the mains of the Indianapolis Power & Light Company was at 5 lb. per sq. in. gage pressure and was turned into the distribution system in the building at that pressure, with no reduction being made.

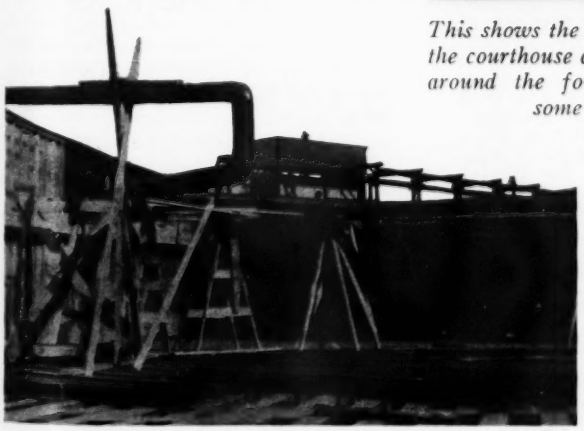
During the preparation period the vacuum return mains were remodeled in order that they could be brought to a central point on the first floor. A vacuum pump was installed on the first floor to remove the air and condensate from the entire system. The connection from the vacuum pump to the vacuum return main was made through a lift pocket and the lift was 7 ft. 6 in.

The Indianapolis Power & Light Company base their heating rates on pounds of condensate and require that all condensate pass through their meter. However, on this operation they agreed to dispense with the use of the meter and base their charges on a flat rate basis. The operation of the vacuum pump was essential, in order to remove the air and condensate from the distribution system on the basement ceiling below. The pump was in operation 24 hours per day on the first floor from Sept. 15 until March 1, in-as-much as the construction of the new basement was not completed to allow the installation of the vacuum pump in the basement until March 1.

The interesting feature in connection with the vacuum pump was that 16 in. of vacuum was maintained on the system, and the original heating system was installed in 1907. Some repair work, of course, was necessary to make the system tight enough to permit the 16 in. of vacuum being drawn.

*Here is the courthouse, the moving of which also is described in this article. The building was in full service during the actual moving and 70 deg. Fahr. temperature was maintained regardless of the fact that the outside temperature was near zero during the entire work*

*This shows the heating supply line for the courthouse and the tarpaulins hung around the foundation to keep out some of the cold*



*the heating main of the local power company. A manhole this possible. A pressure of 5 lb. gage was carried*

# RETAIL ADVERTISING SERVICE

WE continue to aim our copy in the direction of the "Spend for Home in 1932" movement, because it is the livest slogan of the day, the one which, on all hands, is accepted as the best bet for producing business. Use the ads—with or without illustrations—and send the publicity copy to your local newspaper.

## The Comfortable Home —A Recreation Center

YOUNG people have a very natural pride in the home that is comfortable, beautiful and convenient. And they are conscious of those essential services of the kitchen and bathroom, and the fixtures in those rooms. It will help make the home the center of their social life if these important and intimate service rooms are brought up to date. We'll be glad to show you how it can be done. No obligation. Just phone and we'll send a competent man to discuss it with you.

(In this space Your Name, Etc.)

**For one-column space**

Dear Madam:

With the greater amount of entertaining now being done in the home, those essential services in kitchen and bathroom are being given a critical survey by the hostess.

It really doesn't require much to give these rooms a refreshing touch. For example, at a very small cost you may add a bit of color to the bathroom that will make it seem almost a completely renovated room by throwing the white of the fixtures into relief. A touch of color in a shower curtain, in the towel bars, soap dish, etc., a new toilet seat, a new bath mat--you know how much difference they can give to a room.

And in the kitchen your entertaining will be made more convenient if you have some of the newer developments in plumbing fixtures or accessories--a swinging spout faucet, a sink with the new strainer which does away with the old dish pan.

But it is impossible to describe in a letter the many developments both on the side of convenience and beauty which have been introduced in plumbing practice in the last few years.

If you will telephone, we'll be glad to have a competent man call at your home, look over your present plumbing arrangements, and make such recommendations as his experience in modernizing suggests. There will be no obligation on your part. Just telephone.

Very truly yours,
HARRY BROWN

**A plumbing sales letter**

## Home . . . Actually, There *Isn't* Any Place Like It!

**Peculiar, isn't it, how many of us have discovered in the last year or so that home isn't just a place to go to after we've been to all the others? There is more entertaining being done at home and the conscientious hostess is watching those details in kitchen and bathroom which add or detract so much. A little touch of color, a new accessory to replace one that is worn out, will mean greater charm—and greater convenience. We'll be glad to look over your equipment and make our recommendations—without charge to you.**

**(In this space Your Name, Etc.)**

**A two-column newspaper ad**

**The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve —three months' service.**

**If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.**

## GATHERED AROUND THE PIANO—AND IN THE KITCHEN

When young people stage a house party, they're all over the place says Harry Brown, local plumbing contractor.

"For this reason," he adds, "the conscientious hostess wants her kitchen equipment to be at its brightest. Because there'll be half of the party out there at one time or another mixing the ingredients for—let's say candy.

"And the young folk of the home want that kitchen to be the last word in kitchens, which means the right kind of plumbing equipment with the modern beauty they've put into these articles of utility. Young folks are staying home—and that means a new interest in home beautification."

**Hand this publicity item to your newspaper**

PEOPLE are interested in being more comfortable—particularly when comfort means economy. That's the argument developed on this page. Use the copy—with or without illustrations—but use it. That's why it is printed here.

A two-column newspaper ad

# When Greatest Comfort Is Greatest Economy

**In the matter of heating a home, discomfort means waste and loss of fuel. Take the seasons that come between winter and summer. There are mild days and there are harsh days. The modern heating plant is built to adjust the indoor temperature to take up the "slack" in the outdoor temperature. If it too's hot in your home on mild days, and too hot or too cold on cold days—you are wasting fuel. You'd be more comfortable—and you'd save money—if your heating plant gave you just the amount of heat to take up the "slack" in outdoor temperature. Phone us for details.**

**(In this space Your Name, Etc.)**

## Save Money and Be Comfortable

THIS idea of saving money on fuel and yet being comfortable seems to involve a contradiction. But really it does not—for when you are comfortable in your home, it means that your heating plant is giving you just the right amount of warmth. It you're too warm or too cold, fuel is being wasted. Have your heating plant modernized. Then you will always be comfortable—and you will save money on fuel. Phone us for an explanation. No obligation and no cost. But you'll want to be informed.

(In this space Your Name, Etc.)

A single column ad

## TO BE COMFORTABLE, CUT FUEL COSTS

"I know that sounds like a contradication," says Harry Brown, local heating contractor, "like the slogan—'eat and grow thin.'

"But, actually, lack of heating comfort in a home means lack of economy in fuel consumption. If a house is too warm or too cold, you can assure yourself that money is being wasted on fuel in that house. Because a modern heating plant is adjusted to make up the difference between the comfort line and the outdoor temperature. If it falls short, or overshoots that mark, the fuel is being used inefficiently. Being comfortable, therefore, means that fuel is being burned scientifically, and is giving up its quota of heat at the proper rate to make the living rooms comfortable."

Give this publicity item to your local newspaper

## Your Window

**Window displays need change. If you have a permanent display of fixtures and equipment, make changes in lighting—use the free floor space for changed displays of accessories. Property owners who pass your window will never be particularly drawn to it if it remains the same in every detail for months at a time. Change—even small changes—is what draws attention to a window.**

Dear Sir:

I should like very much to submit some interesting figures on fuel to you--to show you how comfortable temperatures in the home and economical use of fuel go hand-in-hand.

You know some homes you visit where it's either too warm or too cold, depending upon the weather. That means that a heating plant is being inefficiently operated, and is wasting fuel. A good heating plant furnishes sufficient warmth to make up the difference between outdoor temperatures and comfortable temperatures in the home.

Particularly in the in-between seasons is this true, when you'd like to "throttle down" the heating plant. If you have a modern plant, that can be done. If not, you'll find it necessary to open doors and windows to bring down room temperatures.

With a modern heating plant this waste of good fuel does not go on. The plant takes up the "slack" in temperature, and you have consistent warmth in your living rooms without excessive use of fuel.

I'd be very glad to visit with you some evening and go over the matter, at your convenience, and without any obligation to you. Just telephone.

Very truly yours,
HARRY BROWN

A heating sales letter

# Editorials

## An Object Lesson?

IN THE January 9 issue of DOMESTIC ENGINEERING we announced the "Spend for the Home in 1932" movement. Before the first thirty days passed, the first run of one hundred thousand of the stickers produced to help put over the campaign, about half of the posters and several dozen of the electrotypes bearing the slogan, had been shipped.

From whom did the bulk of those orders come? Which group of men in our industry showed sufficient alertness to appreciate the tremendous force of that slogan? Those in our industry who have been loud and insistent in their criticism of the plumbing and heating contractor would find it interesting to run through the growing file of orders for this material and to compile a table showing the percentage of the material ordered by contractors, by manufacturers and by wholesalers.

This campaign idea, already noted by one of the great mail order houses which wants to make use of it—by clients of one of the country's greatest advertising agencies—and by men in other positions, men whose opinion on selling bears weight—this campaign idea has been overwhelmingly supported by the plumbing and heating contractor. As is related in the section given over to the plan in this issue (pages 33 to 40), one of them has given strength and direction in his city to the American Legion unemployment drive by focussing the drive on the "Spend for the Home" idea. Other examples will be found there.

The point we want to make here is that not enough wholesalers and manufacturers have responded to an opportunity for leadership that would mean something definite and constructive to the country at large, and certainly would bring prestige to that man or organization, with nation-wide connections, that saw fit to back it.

It is not another "buy now" campaign. It is not an hysterical effort to merely do something. It's a reasoned campaign, built around an idea that offers a sound and understandable reason for spending money. And it is spreading so swiftly that we, who launched it, can not report entirely on its ramifications.

We call attention to the review of progress made in the "Plumbing and Heating Merchandising" feature section—and to a ripe opportunity for some organization in our industry to reap a rich reward by carrying the idea to the country. Interest from other quarters seems to argue that if the plumbing and heating field doesn't lead the way, others will.

## Utilities See a Weakness

THE report of the meeting of the mid-west gas men, in this issue, brings forth an interesting expression from an executive of one utility which has a reputation for advanced ideas about dealer co-operation. This executive says, in effect, that the utilities have made a mistake in taking on one particular product and pushing it to the exclusion of all others.

Those familiar with DOMESTIC ENGINEERING's set of principles to govern utility-dealer relations, will remember that we asked that the utilities cease wholesaling, and also that nothing be done by the utilities which would limit the dealer's choice of equipment.

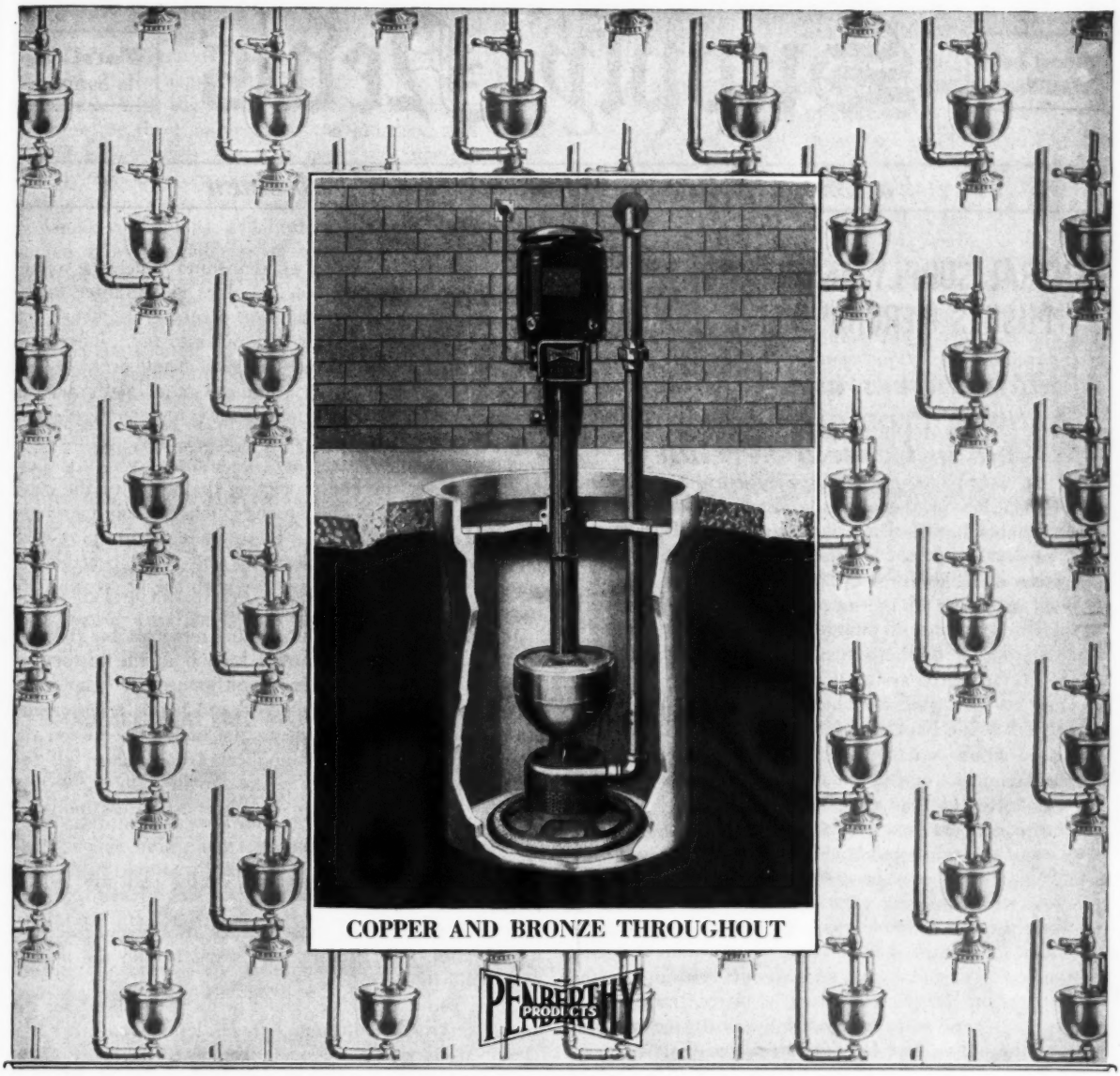
It is generally true that there has been a tendency on the part of the utilities to include in their co-operative plans only one or two products. That is, only one or two water heaters, for example, would be eligible under the terms offered by the utility for trade-in, payment plan, and so on.

Now, says this gas executive, it is plain that the utilities, in doing this, have hurt themselves. By eliminating the majority of equipment of the various types, they have led manufacturers to let down in dealer merchandising, feeling that their products were ruled out. This has resulted in less sales pressure on the consumer and the gas load has suffered. After all, it matters little to the utility whether a water heater or other appliance is sold by it or a dealer. Each piece of equipment builds load.

This recognition of a weakness in utility-dealer relations will probably lead sooner or later to throwing open the gas market to all makes of equipment, at least to all bearing the A. G. A. seal of approval. That will make for a wider opportunity for dealers and will certainly result in greater sales. Reason seems to be gaining headway in this situation—a very good sign for all concerned.

## Mend Your Fences

WE URGE readers of DOMESTIC ENGINEERING again to do what, in political parlance is known as "mending fences"—that is, renewing contacts with those individuals who will be in position to let jobs when the inevitable upturn in construction comes. Now is the time for the plumbing and heating contractor to do a little quiet selling on the basis of quality, and to refresh the memories of those with whom he hopes to do business concerning those special abilities he and his organization possess. This may take the form of personal contact, if the advertising budget will not permit much in the way of advertising—but however it is done, now is the time to do it. One of these days we'll discover that we've actually "turned the corner" and contacts made now will produce business then.




## BEHIND THE PENBERTHY AUTOMATIC ELECTRIC SUMP PUMP

**is an intimate understanding of drainage problems — a first hand appreciation of sump pump requirements—an excellence of engineering skill and workmanship—a practical knowledge of the possibilities and limitations of materials. Behind the Penberthy Automatic Electric Sump Pump lies experience in the development and manufacture of the Penberthy Automatic Hydraulic Cellar Drainer and other liquid-moving devices since 1886. Write for complete information.**

# PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886 DETROIT CANADIAN PLANT WINDSOR, ONT.

## CENTRAL SUPPLY ASSOCIATION PUSHES MERCHANDISING CAMPAIGN

### *Manufacturers and Wholesalers Actively Promote Cooperative Plan in Central Territory*

OFFICERS of the Central Supply Association, the membership of which includes both manufacturers and wholesalers in the central west, are pushing a co-operative merchandising campaign. This has been developed as a part of the association's program to work to increase the sales of plumbing and heating goods. A complete outline of the campaign is given in the following notice from the association's office:

The co-operative merchandising plan announced shortly after the annual convention of the Central Supply Association last October has now taken shape and has been launched under the auspices of the merchandising committee of that association.

The plan in its first stages of development provides for two of the prime essentials of modern merchandising which have not been heretofore made use of in any previous merchandising efforts in this industry.

Manufacturers, wholesalers and retail contractors have not fully realized in the past the absolute necessity of joining forces for the purpose of insuring to the buying public 100 per cent installation of trademarked quality merchandise to safeguard the health and sanitation of the nation, nor have they realized that the principal reason the public dollars have been side-tracked into other industries not nearly so essential to the happiness and comfort of the public was the failure of the plumbing and heating industry to acquaint the public with the type of merchandise offered and the expert installation available through reputable retail contractors.

#### TOO MUCH MYSTERY IN SELLING

In the past there has been too much mystery in selling our wares. Price tagging merchandise in show rooms has been taboo and difficulty has always been experienced by the man who wanted to buy our merchandise in finding out what it was going to cost him.

Chain stores, direct-to-you and mail order houses have seized upon this shortcoming of ours. They have offered non-trademarked merchandise, but they have plainly marked the price on it; they have told the public about what they had for sale and what it would cost them, and the public has bought it because the man with the dollar in his pocket is used to buying that way.

This type of merchandise does not provide the public with trademarked quality goods behind which the manufacturer will always stand, nor does it guarantee to the purchaser the expert installation necessary to insure 100 per cent satisfaction after it is put into use. Therefore the co-operative merchandising plan being promoted by the Central Supply Association will acquaint the buying public with the trademarked quality merchandise made available by reputable manufacturers and installed by reputable retail contractors in accordance with local building codes, thereby protecting the health of the community. It attracts the buying public to this merchandise and expert installation by prominently marking each piece on display in wholesalers' and retail contractors' show rooms and show windows with the price at which it can be purchased by the public.

It provides for distributing this merchandise through the most economical channels known in the history of distribution, namely, from manufacturer to wholesaler to retail contractor to consumer, and builds a better and closer co-operation throughout the industry between the manufacturer, wholesaler and retail contractor, all for the purpose of assuring to the buying public the best possible value for the money it spends in this industry.

#### THE PLAN

Briefly, the essential features of the plan are as follows:

1. Manufacturers must trademark every piece of merchandise they produce and stand behind the quality they build into it.

2. This merchandise should be made available for the retail contractor through wholesalers, who are best equipped to warehouse and distribute the many thousands of articles necessary to complete any kind of an installation.

3. The merchandise should be sold from the wholesaler's warehouse through reputable retail plumbing and heating contractors to insure expert installation, which will result in delivering to the ultimate purchaser the 100 per cent satisfaction built into it by the manufacturer.

4. Every piece of merchandise displayed in a wholesaler's or retail contractor's show room should be prominently tagged with a reasonable price to the public, so that a buyer can see at a glance what the item will cost him.

5. The merchandise should be attractively displayed to induce the public to step into the show room and look at it, and the salesmanship should be such as will keep the prospect interested enough when in the show room that he will want to stay.

6. Merchandise sold to the public in a wholesaler's show room should be delivered to the consumer only through a retail contractor, designated by the purchaser,

and who is capable of properly and correctly installing the material.

7. Manufacturers, wholesalers and retail contractors throughout the length and breadth of the land should co-operate with each other to build stronger confidence between the three branches of the industry, and should pull together with the one common purpose ahead, namely, to carry out the responsibility of this great industry to humanity and insure the buying public obtaining quality plumbing and heating material properly installed at a reasonable price compatible with the value built into it.

Such is the plan presented by President William J. Spillane and Secretary Robert Macfee of the Central Supply Association at a series of joint meetings of wholesalers and retail contractors recently conducted in the following cities: Milwaukee, Wis.; Springfield, Ill.; Cincinnati, Ohio; Memphis, Tenn.; Dallas, Fort Worth, San Antonio and Houston, Tex.; New Orleans, La.; and Atlanta, Ga. During the series some 1700 retail contractors were addressed and many of these cities have already adopted the plan.

Key cities throughout the entire territory covered by this association will be visited in the near future in an effort to acquaint every wholesaler and retail plumbing and heating contractor with the plan and his relationship to it.

## MANUFACTURERS VOTE "NO" ON GAS CONVENTION EXHIBIT

A recommendation that no exhibit be maintained at the forthcoming convention of the American Gas Association and approval of the standards of trade practice as originally submitted were the two outstanding results of the special general meeting of the manufacturers' section of the American Gas Association at the Palmer House, Chicago, on February 18.

The question of the exhibit brought forth considerable discussion, and the reaction of the manufacturers to this matter will be called to the attention of the American Gas Association committee and board. A vote showed an overwhelming majority of those present to be in favor of discontinuing the exhibit for 1932.

The discussion brought out that possibly a permanent exhibit will be maintained in Chicago in 1933 in connection with the Century of Progress Exposition, and it was the opinion of many that therefore it was not necessary to also exhibit at Atlantic City in the fall of 1932.

A number of the manufacturers present stated that the exhibit was an unprofitable proposition and did not bring them any business that they would not otherwise secure. The contention of several of this group was that the money could be better spent in other forms of sales promotion, such as advertising.

A few of those in attendance, however, felt that the exhibit should be continued as in the past.

Philip O. Deitsch, secretary of the group, reported on the successful results of organization meetings on the Pacific Coast and in the South. David Kahn of the Estate Stove Co. was chairman of the meeting. R. M. Conner of the A. G. A. testing laboratory explained the operations of the laboratory and urged manufacturers to present new products as soon as they are developed.

## E. S. A. REQUESTS CLOSER MANUFACTURER-WHOLESALER CO-OPERATION

The Eastern Supply Association, in a recent bulletin to its members, requests closer co-operation between manufacturers and wholesaler in 1932. The bulletin, which is signed by Secretary Frank S. Hanley, says in part:

"Co-operation between manufacturers and wholesalers with a view to making possible a more efficient and economical flow of supplies to the user is the key to the present unsettled state of our industry. The need for immediate co-operation of both branches is imperative. Manufacturers must be convinced of the value of wholesalers, and the burden therefore falls directly on him to prove his worth. Can he do it? Of course. The greatest business heads in the country freely admit it, if, he will co-operate with the producer in marketing problems. There can be no let-up in this work; no listless, half hearted measures will get him anywhere; only an enthusiastic, aggressive follow-up will place the wholesaler where he rightfully belongs—namely—as the most economical distributor of the manufacturer's products. If he so wills, no one else can compare with him in this capacity."

## CENTRAL SUPPLY ASSOCIATION MEETING DATES ARE ANNOUNCED

The Central Supply Association will meet at the Palmer House, Chicago, Ill., April 6 and 7, for its 108th regular meeting. The executive committee of the association will meet on April 5.

A program committee has been appointed by President William J. Spillane, and details of the program will be announced as soon as they have been completed.

"It is hoped that the importance of this coming meeting will encourage every one of our members to make what sacrifices may be necessary in order to attend," said R. Macfee, secretary of the association, in discussing the meeting.

## OPENS BRANCH IN TROY, N. Y.

Pierce, Butler & Pierce Mfg. Corp., New York City, has announced the opening of a new branch located at River and Madison streets, Troy, N. Y. The new branch was opened on March 1, under the direction of George H. Fox as manager. Mr. Fox has been connected with the New York office of the Pierce corporation for many years.

The corporation has placed John Chapman, district manager for upper New York State, in charge of its Syracuse and Troy branches.

## MONROE CO. INCORPORATES

Monroe Company, plumbing and heating wholesale firm of Jamaica Plain, Mass., was recently incorporated under the laws of the state of Massachusetts. There has been no change in management or ownership of the company.

# MODERN *in design* MODEST *in price...*

CLYDE LAVATORY

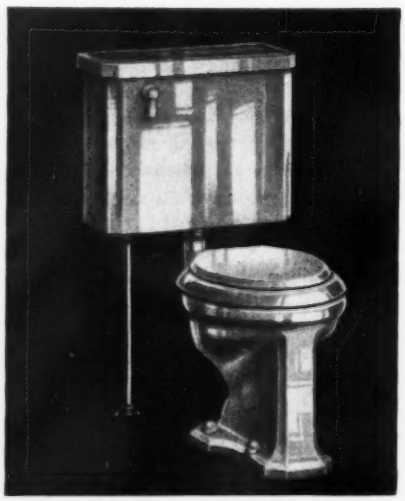
Here are "Standard" fixtures strictly modern in design, yet surprisingly moderate in price. The Pembroke *Neo-Classic* bath, Clyde lavatory and Modernus closet are attractive fixtures within the reach of the most modest purse.

Show your customers modern bathroom fixtures. The classic lines of the Pembroke *Neo-Classic* bath, the attractiveness of the Clyde lavatory and the distinctiveness of the Modernus closet reflect the modern motif and bring new beauty to the bathroom.

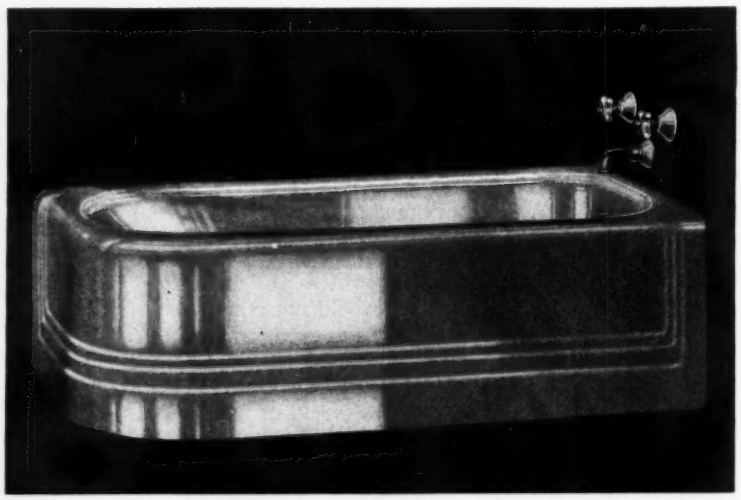
Displaying these fixtures is the first step in selling them to those with a modern taste and modest purse. Other "Standard" fixtures may be had at even lower prices.

Write today for the "Standard" plan of selling to old homes on convenient payments.

**Standard Sanitary Mfg. Co.**
PITTSBURGH, PA.
DIVISION OF
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION



MODERNUS CLOSET



PEMBROKE *NEO-CLASSIC* BATH

## CAMPBELL MACHINE CO., INCREASES NUMBER OF EMPLOYES

Shop and sales employes have been added by the Campbell Machine Co., Minneapolis, Minn., manufacturer of oil burners, and further increases to the force is being planned this year.

W. R. McIver, associate with the oil burner industry in Minneapolis for a number of years, has joined the Campbell company as national sales manager and connections have been established on both the Atlantic and Pacific seaboards.

The Campbell company was formed in 1921, W. H. Campbell being its president.

Mr. Campbell recently stated that on the basis of present orders business for 1932 looked very encouraging. January sales were 50 per cent ahead of January, 1931.

## WILL REPRESENT TITUSVILLE IRON WORKS

Gilbert Howe Gleason & Co., Nottingham building, Copley Square, Boston, Mass., has been appointed sole representative for the Titusville Iron Works Co., of Titusville, Penna. The territory this firm will serve will be Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and part of Connecticut. It will handle the Titusville company's line of power and heating boilers.

## NEW DISTRIBUTOR FOR BARBER-COLMAN CO.

The Park S. Hedley Co., Curtiss building, Buffalo, N. Y., has recently been appointed distributor for the Barber-Colman Co. of Rockford, Ill., in the counties west of and including Cayuga, Tompkins and Chemung in New York State, and the counties of Erie, Crawford, Warren, McKean and Potter in Pennsylvania.

## S. R. DRESSER MFG. CO. REPORTS ON EARNINGS

S. R. Dresser Mfg. Co., Bradford, Pa., reports for year ended Dec. 31 net profit of $691,787, equal to $4 a share on 100,000 shares of class A stock and $2.92 a share on 100,000 shares of class B. In 1930 earnings were $4 a share on class A and $5.24 a share on class B.

## APPOINTS NEW DISTRIBUTORS

The Burke Electric Co. of Erie, Pa., has appointed Albert J. Walz as distributor of its line of motors, generators and electric welders in the Chicago district. He will make his headquarters at 205 West Wacker drive, Chicago.

The Burke company has also appointed P. J. Burrill and J. L. Vergillio as its general distributors in northern Ohio. They will make their headquarters at 924 Prospect avenue, Cleveland.

## PHILADELPHIA CHAPTER OF A. S. H. V. E. ELECTS OFFICERS

The following officers were elected at the recent annual meeting of the Philadelphia Chapter of the American Society of Heating and Ventilating Engineers: L. C. Davidson, president; M. F. Blankin, vice president; William P. Culbert, secretary, and J. H. Hucker, treasurer.

## AIR CONDITIONING DISCUSSED AT MICHIGAN CHAPTER MEETING

About fifty members and guests were present at the February 15 meeting of the Michigan Chapter held at the Detroit Engineering Society building.

S. S. Sanford of the Detroit Edison Co., presented a paper "Field Studies of Office Building Cooling." The lecture was illustrated with slides.

Mr. Sanford discussed the air conditioning of the first sixteen floors and two basements of the Union Guardian building. He also discussed several methods of cooling small spaces, either by unit coolers, or by means of ice. According to Mr. Sanford, the Detroit Edison Co. is to make a certain number of air conditioning installations during the coming year, some of which will use the small cabinet units and one installation will use ice.

He told of a restaurant that has increased its business 25 per cent by the installation of a cooling system.

The discussion of the paper showed a great interest in the subject, and was participated in by Messrs. Randall, Rowe, McIntyre, Wallich, McColl, Paetz, and others.

## PHILADELPHIA CHAPTER HEARS PRESIDENT CARRIER

W. H. Carrier, national president, addressed the recent monthly meeting of the Philadelphia Chapter of the American Society of Heating and Ventilating Engineers, taking as his subject "Servicing the Human Power Plant." A. V. Hutchinson, national secretary, also addressed the meeting.

A number of reports were submitted at the business session preceding Mr. Carrier's address. Harry A. Erickson, chairman of the Year Book Committee, stated that the Year Book would be published at an early date. M. F. Blankin reported as treasurer. Mr. Blankin was elected representative, and A. C. Edgar, alternate, to serve on the national nominating committee for 1932.

## ONTARIO CHAPTER HEARS ADDRESS ON "AUTOMATIC CONTROL"

The recent regular meeting of the Ontario Chapter, A. S. H. V. E., was held at the Prince George hotel, with forty members and guests present for the dinner and business session.

W. R. Blackhall made a report on membership which was followed by a discussion. A special drive is being made to increase the membership of the Chapter.

W. P. Boddington introduced the principal speaker of the evening, T. McDonald, who gave an illustrated talk on "Automatic Control."

## INSTALL NEW OFFICERS AT MEETING

The newly elected officers were formally installed at a recent meeting of the Western New York Chapter of the American Society of Heating and Ventilating Engineers, which was held in Buffalo. The affair was attended by the wives of the members.

Myron Beman, newly elected president, named Ross Farnham as toastmaster of the evening. The program committee is arranging for interesting technical discussions for the remaining spring meetings. W. E. Voisnet is the new secretary.

## ELECTED PRESIDENT OF HOFFMANN & BILLINGS MFG. CO.

Edward F. Niedecken, former vice president and treasurer of the Hoffmann & Billings Mfg. Co., Milwaukee, Wis., has been elected president of that concern to succeed Fred Hoffmann, who died January 1. The election took place at the annual meeting of the company, held Monday, February 15, at the local offices at Milwaukee. Fred Gezelschap has been elected vice president of the company and Edward T. Hoffmann secretary. Officers constitute the board of directors of the concern.

## MOVES SAN FRANCISCO OFFICE

The Hoffman Heater Co. of Louisville, Ky., has moved its office in San Francisco, Calif., from 757 Bryant street to 1550 Market street.

## MOVES FROM CHICAGO TO EVANSTON

The Doherty-Brehm Co. has moved its offices from 333 North Michigan Avenue, Chicago, to 2144 North Ashland Avenue, Evanston, Ill.

## WILL REPRESENT B-LINE BOILER CO.

J. M. Fisher has been appointed representative in Illinois and Indiana for the B-Line Boiler Co., of Cleveland, Ohio. He succeeds the late Edward J. Burke who represented the company in that territory for many years. Mr. Fisher had been associated with Mr. Burke in a sales capacity since 1927 and is well known in the territory. He will make his headquarters in the People's Gas building, 122 South Michigan avenue, Chicago, Ill.

## WIGMAN CO. HOLDS SALES CONFERENCE

Wigman Company, plumbing and heating wholesale firm of Sioux City, Ia., held a three-day sales meeting at its office the middle of last month. Included on the program were a number of manufacturers' representatives.

Mrs. William H. Wigman is president of the company; W. H. Griffith, secretary and manager of sales; and E. L. Vennard, treasurer and general manager. Among the manufacturers who were represented at the conference were: Standard Sanitary Mfg. Co., Pittsburgh, Pa.; Trane Co., La Crosse, Wis.; Mueller Brass Co., Port Huron, Mich.; Weil-McLain Co., Michigan City, Ind.; McKays Co., St. Paul, Minn., and Fairbury Windmill Co., Fairbury, Nebr.

**Back row, left to right: A. H. Raven, Roy G. Anson, E. C. Nelson, E. L. Murray and J. E. Fagner. Front row: F. Baxter Holbrook, H. M. Dickinson and W. M. Manning. Photo taken at recent sales meeting of Wigman Co., Sioux City, Ia.**

## RAYMOND NEWCOMB AND E. N. CUNNINGHAM DIE IN ACCIDENT

Raymond Newcomb, vice president, and E. N. Cunningham, Birmingham, Ala., representative of the Fitzgibbons Boiler Co., Inc., of Oswego, N. Y., died on February 15 as the result of injuries received in an automobile accident at Birmingham on that day.

Mr. Newcomb was in his 34th year at the time of his death. He resided at White Plains, N. Y., and is survived by his wife and two children.

He was a graduate of the Massachusetts Institute of Technology and did post-graduate work at Stevens Institute, specializing in boiler design and operation.

At the close of the war he became associated with the boiler company and was rounding out thirteen years of service, successively, in the shop, as a salesman, as manager of the Boston office, and finally as vice president in charge of branch sales.

Mr. Newcomb was deeply interested in boiler development and his service to the industry in this direction is best exemplified by his active participation in the work of the following societies and committees of which he was a member:

Am. Soc. M. E. boiler code committee, heating boiler division; Steel Heating and Boiler Institute, boiler code committee; A. S. H. & V. E. committee on rating and testing of low pressure boilers, and member of the board of governors of the New York Chapter of this society.

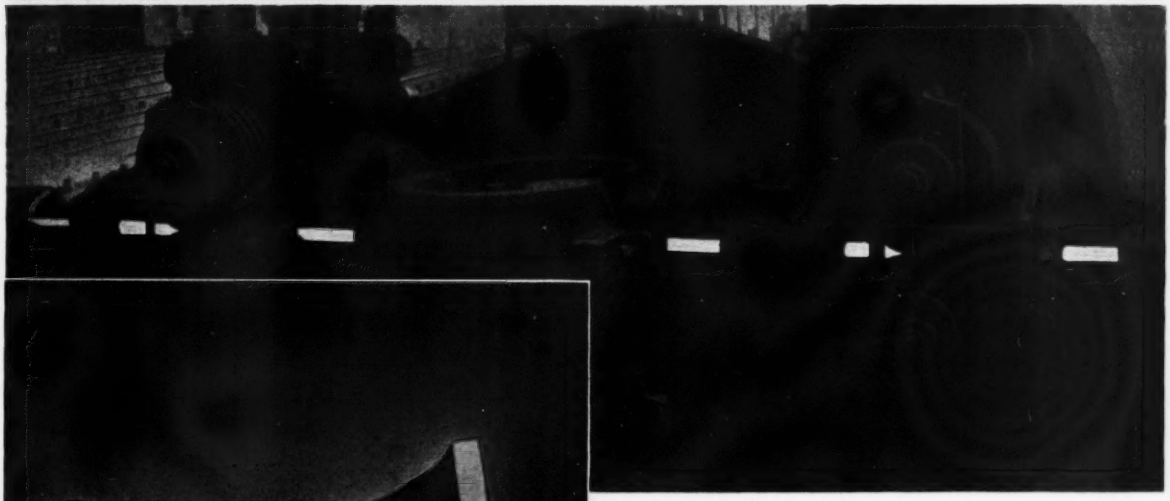
Through his business relations and society activities he was widely known throughout the boiler industry and the trade.

## JOHN M. UHLER CONTINUES AS REPRESENTATIVE OF BELKNAP MFG. CO.

John W. Gannon, 30 Church street, New York City, has been appointed sales representative for Belknap Mfg. Co. of Bridgeport, Conn., in Northern Pennsylvania and New York state, except in the metropolitan area.

An announcement in our February 6 issue failed to make clear that John M. Uhler of 15 Park Row, New York City, who with his father has represented the Belknap Mfg. Co. in the metropolitan area of New York City for more than twenty-five years, continues as the company's representative in the metropolitan district.

# THE SCALE IS TAKEN OUT··



## AND THE PIPE LEFT SMOOTH AND CLEAN

A uniformly dense, homogeneous structure, with a smooth, clean surface means a metal of greater resistance to corrosion. "That stands to reason", as the practical user would say. Service records bear out the reasoning. And science makes clear that the experience is not accidental.

The NATIONAL Scale Free Process (applied to butt-weld pipe, sizes ½ to 3-inch), plus Spellerizing, are two definite, specific mill operations that produce this homogeneous structure and smooth, clean surface. Therefore, NATIONAL Scale Free Pipe is highly resistant to initial attacks of corrosion and quite specially to pitting. The treatment by which mill-scale is removed and the pipe wall made smooth and clean gives the user a more durable piping system for various kinds of service. The clean interior takes a more adherent galvanizing coat, while the smooth exterior gives a more satisfactory appearance, especially where enamels, bronzing, plating, or other finishes are added, or for railings and grill work.

When you buy or specify this cleaner, better-looking pipe, you do more than give preference to a visible refinement. You provide for inherent practical advantages of considerable value.

The Scale Free Process is a patented method developed by National Tube Company and applied only to NATIONAL Pipe—

***America's Standard Wrought Pipe***

NATIONAL TUBE COMPANY · Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

# NATIONAL SCALE FREE PIPE

### DOMESTIC AIR CONDITIONING OPENS BIG MARKET

A bright future for domestic air conditioning, which he feels will be a powerful factor in promptly helping business, and the subsequent development of air conditioning into a new major industry was predicted by F. C. Lyons of Frigidaire Corp., Dayton, Ohio, before the annual sales conference of the National Electric Lighting Association, held in Chicago the latter part of February.

The speaker referred to a recent statement by President Hoover to the effect that in fighting the business depression the country should consider itself at war against a common enemy. Developing his talk from this viewpoint, Mr. Lyons stated that in a war on business depression "soldiers" with a merchandising type of mind are needed in order to gain victory.

"The specialty type of salesman," he said, "is looked to to bring back prosperity by selling merchandise. The salesman, however, needs additional ammunition in order to reach the person who has money and is refusing to spend it."

Air conditioning could rightfully be classed as the needed "heavy guns" in the attack on the business depression, he remarked, deriving its power from three sources:

1. Air conditioning has an annual sort of appeal since the prospect is able to actually "feel" the results of his purchase. Therefore, he will listen to the appeal.

2. It has the potentiality of bringing profits to users, such as dress shops, restaurants, shoe stores, etc.

3. It keeps people in good health and gives them the required energy and ambition to do their work better.

He said it was important that air conditioning be made available in compact form with a minimum of engineering detail, and that as this is accomplished it will take a permanent place among the fundamental factors in the social structure.

# Business Personals

E. I. LEIGHTON, president of the Leighton Supply Co., Fort Dodge, Iowa, was in Washington, D. C., last week, representing the Central Supply Association at a hearing before the judiciary committee of the U. S. Senate on three bills introduced by Senator Gerald P. Nye of North Dakota. These bills are known as S-2626, S-2627 and S-2628. Senator Nye claims that these bills propose to afford a field for fair play in the business world. They are intended to free the channels of commerce from destructive "cut-throat" competition and thus permit the continued existence of thousands of honest and efficient business establishments.

CHARLES MILLAR, president of Charles Millar & Son Co., Utica, N. Y., has been elected a director of the Utica Steam and Mohawk Valley Cotton Mills.

E. A. KLEINSCHMIDT, secretary and executive treasurer of the York Ice Machinery Corp., York, Pa., and Mrs. Kleinschmidt are enjoying a vacation cruise to the West Indies and South America. Mr. Kleinschmidt has been associated with the York Ice Machinery Corp. and affiliated companies for the past twenty years.

ERNEST SANGER has just been appointed sales representative of the Pittsburgh Tube Co. of Pittsburgh, Pa., for the state of Michigan. Mr. Sanger will make his headquarters in Detroit.

W. A. ROSENBERGER has been appointed chief engineer of the Pangborn Corp. of Hagerstown, Md. Mr. Rosenberger, a native of Switzerland, graduated in 1909 from the Polytechnikum at Zurich, and came to the United States. For twenty years he has specialized in blast cleaning and dust collecting problems, making many valuable contributions, in the form of inventions.

HOWARD H. CHAPLIN, former branch manager, at Providence, R. I., for the American Radiator Company and district sales manager, with headquarters at Boston, Mass., for the Pierce, Butler & Pierce Mfg. Corp., has joined the Murdock Mfg. & Supply Co., Cincinnati, O. He will be associated with the company's sales organization.

**Charles N. Stoddard**

CHARLES N. STODDARD was elected president and general manager of the Greenfield Tap & Die Corp., Greenfield, Mass., at a recent board meeting. He succeeds Francis G. Echols, who retired, after having been connected with the small tool business for over forty years. Mr. Stoddard, a Greenfield attorney, is a director of several New England financial and industrial corporations, but he will devote his entire time to the duties of his new office. He has served as general counsel and as director of the Greenfield Tap & Die Corp. since its inception, and was its vice president for a year prior to being elected president and general manager. He has had a long and varied experience in the financial and industrial world, as well as in the legal profession.

C. E. ANDERSON has been appointed auditor of disbursements in the accounting department of the General Electric Co., Schenectady, N. Y., to succeed the late F. D. Kamerer. At the time of his new appointment he was assistant statistician of the company.

JOHN A. QUINN, formerly with the New York City office of J. B. Wise, Inc., of Watertown, N. Y., has been transferred to the Philadelphia, Pa., office of the company, which is located in the Stephen Girard building. C. R. WELTE, formerly with the Philadelphia office of the company has been transferred to the New York City office.

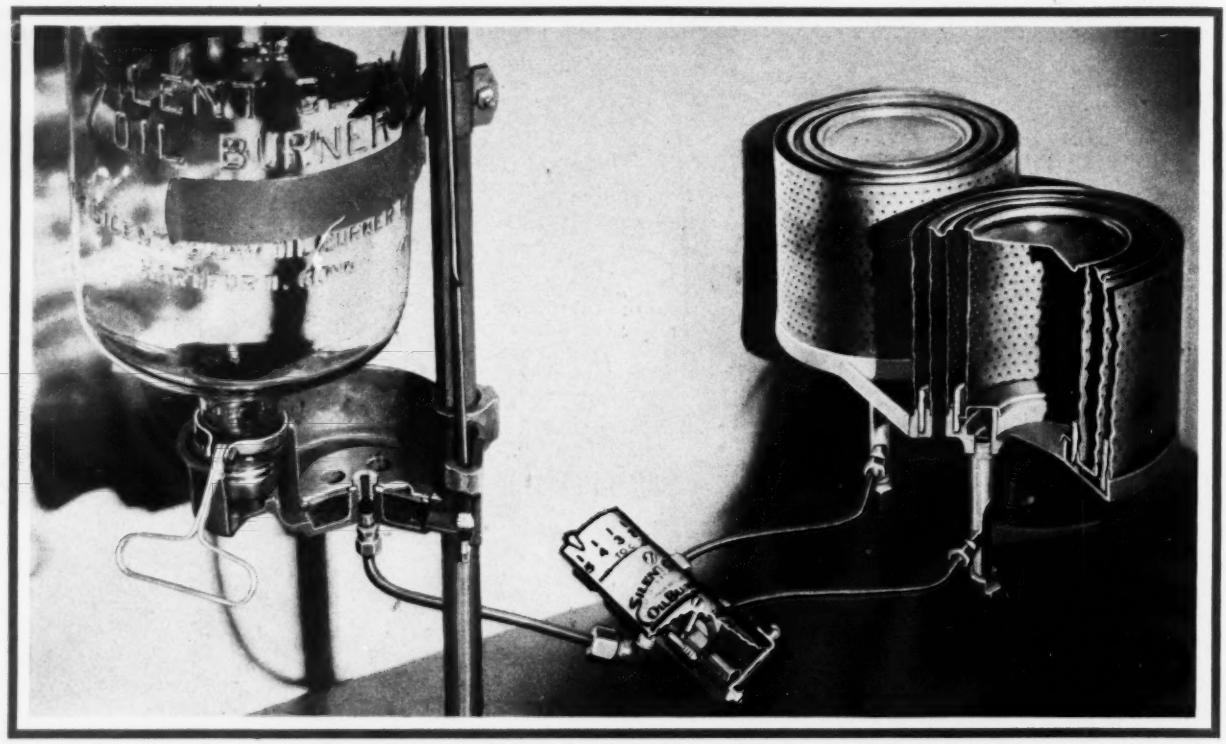
TIMOTHY O'LEARY has joined the sales organization of Union Metal Works, Inc., Chelsea, Mass. He will work among wholesalers and contractors in Connecticut, Rhode Island, New York State, including New York City, New Jersey and Pennsylvania. Mr. O'Leary was formerly with Walworth Co. and spent about eleven years in sales promotional work for that company.

DOMESTIC ENGINEERING

**AN EDITORIAL SECTION**

AUTOMATIC HEAT SECTION

# SILENT GLOW SUPERIORITIES



## ·6· THE RANGE BURNER ITSELF

For some time past, we have been presenting in these pages, certain of the exclusive Silent Glow Range Burner features which have made it superior to any other burner on the market. We have shown them in detail. Here they are in their relation to one another.

Beginning at the left with the bottle reservoir, you can see from our illustration how the oil travels down and then up through the exclusive Reversflo Filter**, which removes impurities from the oil. Then, through the feed pipes to the Microfeed Valves**, which, by enabling the housewife to regulate the flow of oil practically to a drop, permit her to have the exact degree of cooking heat desired.

From the Microfeed Valves**, the oil travels again through feed pipes to the exclusive, patented Self-cleaning Oil Feeds, cadmium plated to prevent corrosion. The Self-cleaning Oil Feeds* take the last bit of impurity and water out of the oil, thus assuring a clean, even flame and a minimum of carbon. The oil then travels to the burner unit, whose cadmium plated base with its Kleendam minimizes carbonizing and assures even vaporization.

The Superheater** in the lower part of the burner unit makes the Silent Glow Range Burner the fastest starting in the world. Lastly, the patented Deflector Rings insure an even flame and therefore an even heat at all times, and prevent warping of the shells.

At the side of the glass reservoir, you will see the Reddylite**, a device for lighting the burner, which is always ready to light and always immediately extinguished when returned to its receptacle.

Study these features carefully and you will see why the Silent Glow Range Burner is the largest selling, fastest selling range burner in the world, the range burner you ought to sell. If you want to know more about making money with Silent Glow, as thousands of others have, write or wire today.

**THE SILENT GLOW OIL BURNER CORPORATION**

Chicago HARTFORD, CONN. St. Paul

IN CANADA: SILENT GLOW OIL BURNER CORP., LTD.
6320 St. Hubert St., Montreal, P. Q.

*Patented
**Patent applied for

*Member American Oil Burner Assn.*
*Member National Electric Light Assn.*
*Member Oil Heating Institute*
*Member Distillate Burner Mfgrs. Assn.*

Listed as Standard by the Laboratories of the National Board of Fire Underwriters

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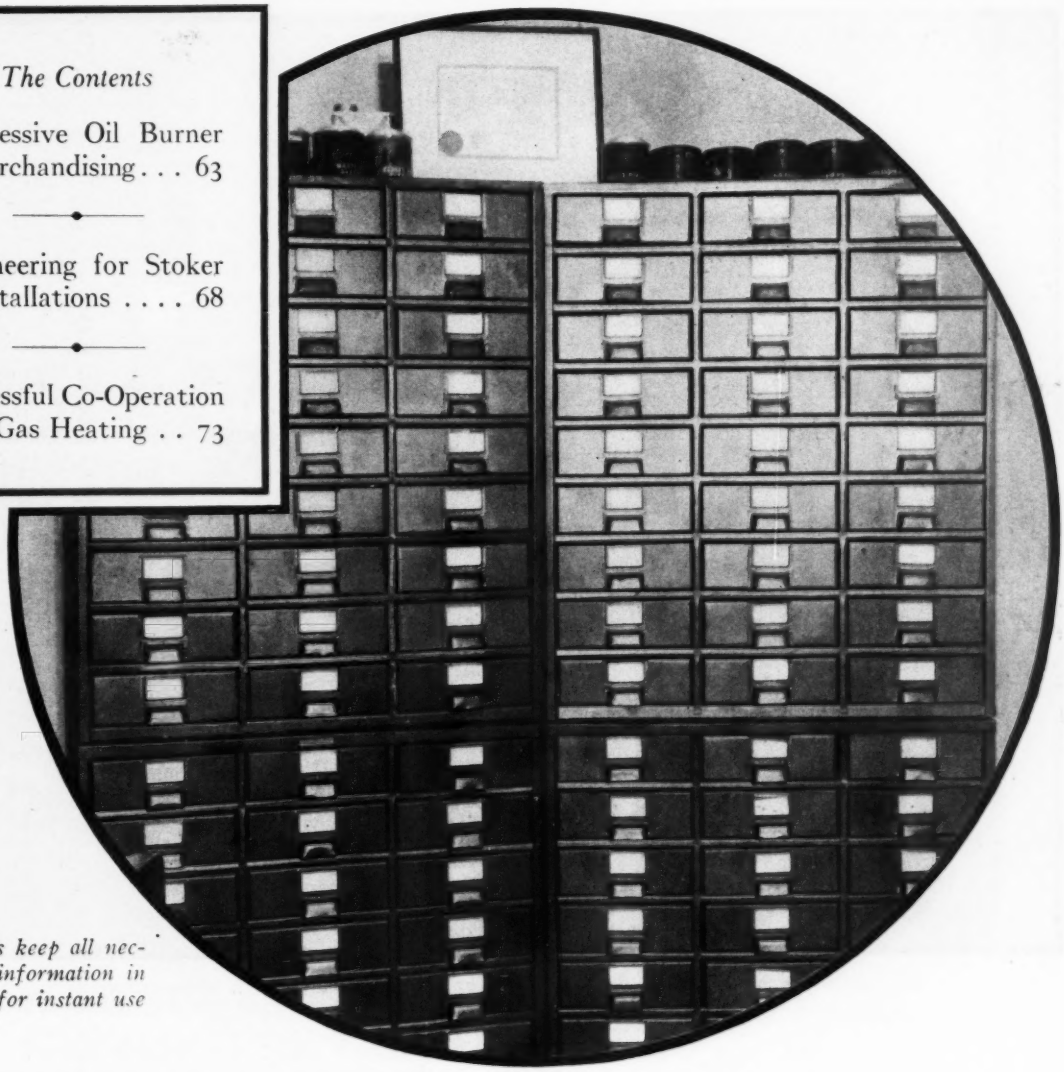


*These files keep all necessary information in readiness for instant use*

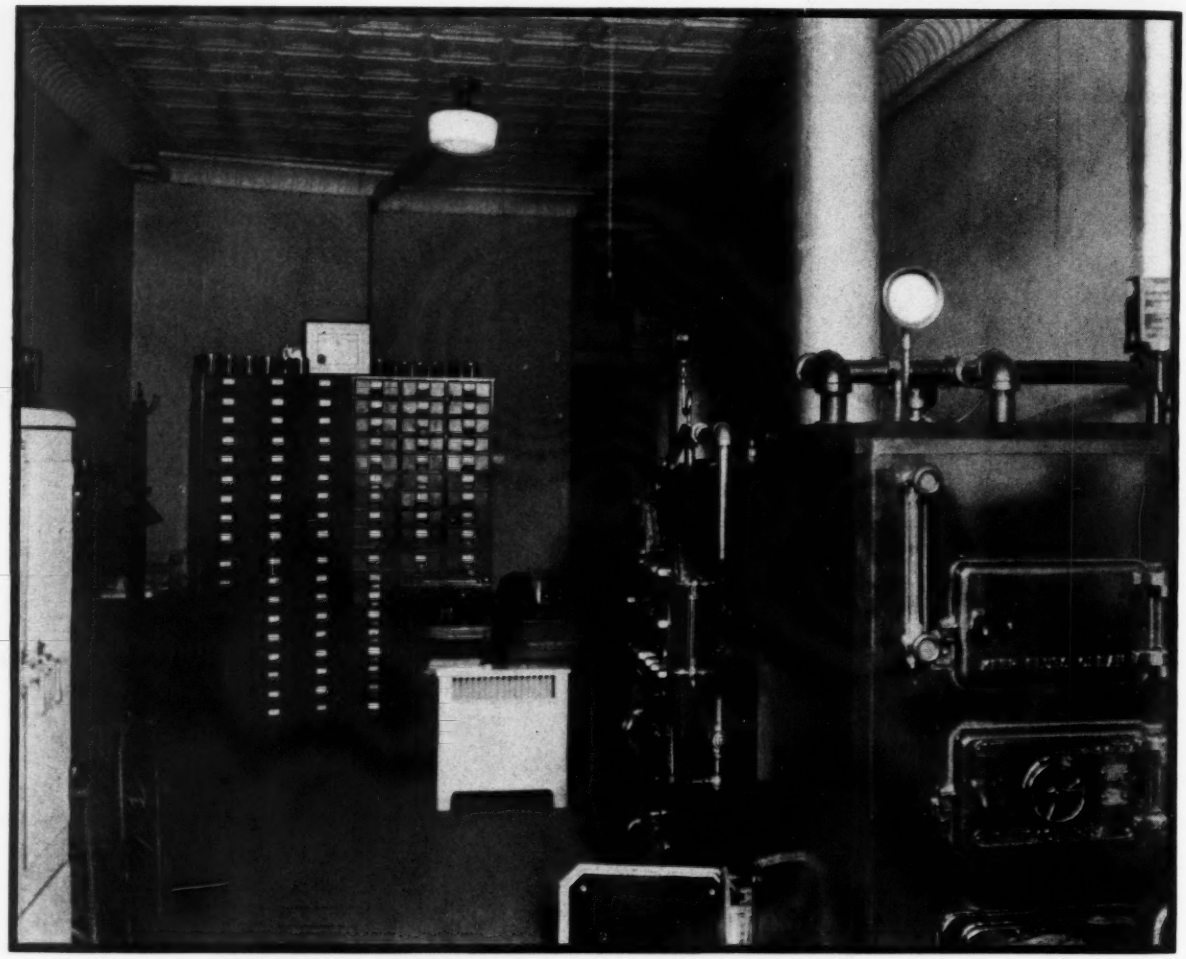
# Progressive Oil Burner Merchandising

PROGRESSIVE business cannot stand still. To have a progressive business these days, one must merchandise. But how about merchandising itself? It, too, must be progressive. It, too, must advance as rapidly as everything else. Merchandising practices of today seem complete—sure thing bets, the maximum in sales efficiency—but tomorrow they are inadequate, unworkable, even costly and disastrous.

These are the sentiments of a plumbing and heating contractor in Tarrytown, N. Y., who has established, in his locality, a record for progressiveness and a reputation for success. T. A. Nolan, of Nolan Brothers, has found time to run a successful business for thirteen years, become president of the Westchester County Association of Master Plumbers and Steamfitters, be an active member not only in the American Society of Sanitary Engineering and the Heating and Piping Contractors, New York State Association, but allso in his local chamber of commerce.

While for the moment we are particularly interested in his oil burner selling activities, because of his unusual methods of merchandising, it is necessary to reflect upon the fact that his letterhead also carries the announcement of other work he does which consists of certified

AUTOMATIC HEAT SECTION



*The display floor of Nolan Bros. store. The customer may watch demonstrations in perfect comfort*

heating, sprinkler systems, electric heaters and refrigeration. Besides these, he of course carries and sells accessories. Quite a sizable line, particularly when it is discovered that a good business is being done in each and what is more important, that each serves as a sales help for the rest.

### DIVERSIFIED SALES IMPORTANT

Diversification of sales effort plays an important part in the program of this contractor and this in itself is proof positive of his progressive merchandising. To illustrate, suppose that a customer is sold a sprinkling system, is he not a prospect—and a preferred one—for an oil burner? In other words, a customer to whom equipment running into the cost of a sprinkler system can be sold, is preferred over a prospect who has purchased nothing. The reason for the preference is simple. Confidence has already been instilled in the customer by good work, good value and personal contact. Such a customer will at least listen open-mindedly to a proposition calculated to save him money, time and trouble. Secondly, such a customer is already qualified as a credit risk and of course likewise classified as to spending power. His buying habits, too, are known so that sales resistance is reduced to the lowest possible minimum. The result is, a concerted, planned method of sales attack which of course leaves nothing to the imagination and very little to chance.

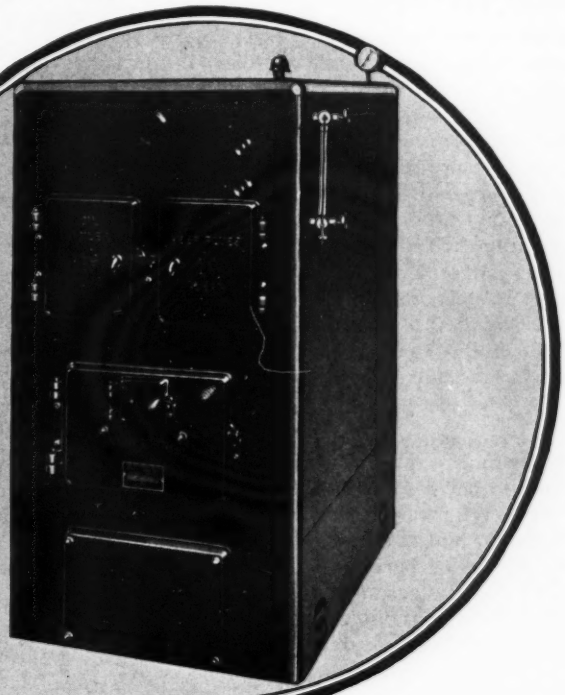
### HE STUDIES OTHERS' METHODS

The same holds true naturally for the other lines, but it is particularly valuable for oil burner selling. Such analysis of sales potentialities may sound difficult, but in actuality they are really very simple. It is simply a case of keeping abreast. T. A. Nolan is a plumbing and heating contractor, as we know, but even without his definitely stating so, it is a sure thing bet that he watches every other business in his territory closely. Much of the art of showroom selling he has learned from department stores, much of his direct mail knowledge as will be seen later, he has discovered simply by studying the efforts of successful manufacturers who have tried to sell him by mail. They, he knows, in most cases, have made intensive studies of such things, and the kind and type of material that develops a tendency in him to buy will very likely do the same in his prospects.

Everyone admits, nowadays, the value of advertising and merchandising. But what is the use of advertising

AUTOMATIC HEAT SECTION

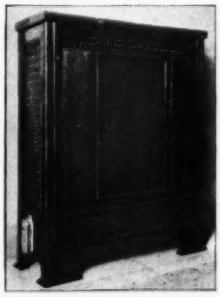
# THE NEW IDEAL OIL BURNING BOILER



## THE CAST-IRON BOILER

*Built Exclusively for Oil Burning*

Not an adaptation, but a brand new creation—a cast-iron boiler designed and built in cooperation with the American Oil Burner Association, to meet all the special requirements of oil burning. From dome to base, from front to rear, new and exclusive features have been embodied to insure maximum efficiency, safety and cleanliness in the New IDEAL OIL BURNING BOILER No. 12.



*New Cascade Humidifier*
Automatically provides the correct humidity; enclosed in non-corrosive aluminum cabinet; sanitary and silent; comes completely equipped ready for attachment.

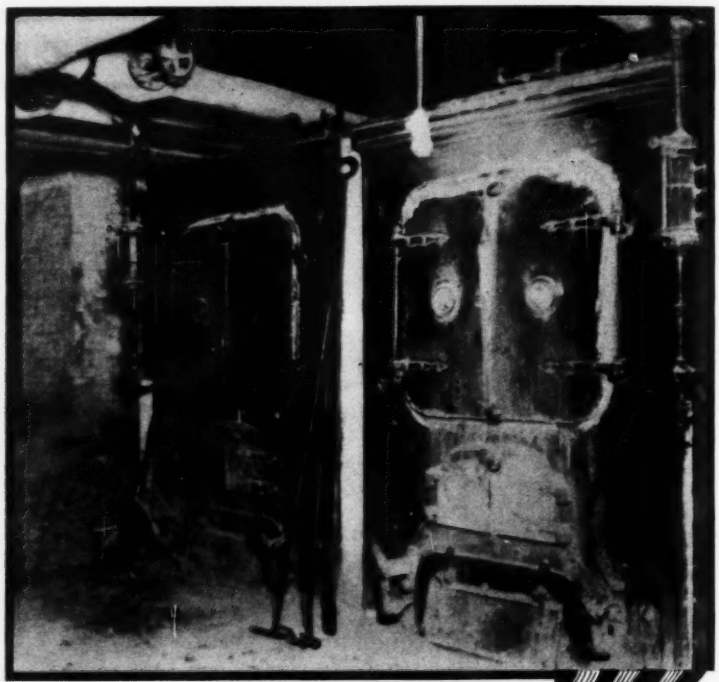
### SOME FEATURES OF THIS BOILER

High efficiency... flue travel four times the length of the boiler... adapted for both rotary and gun type burners... burners can be installed either in front or rear... simplified external hot water heater connection... special port in door for observing performance of burner... encased in a beautiful, lustrous, insulated metal jacket finished in light green enamel.

WRITE TODAY FOR COMPLETE INFORMATION and CATALOGUE

AMERICAN RADIATOR COMPANY
40 West 40th Street, New York, N. Y.
Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

AUTOMATIC HEAT SECTION



*Here we see a pair of boilers in the condition they were before the Nolan firm entered into the picture and made the changes as shown on the next page*

the wrong way? If a man wants really only to buy a toilet seat why not sell him one? Why waste time and money advertising to him and trying to influence him to buy an oil burner and lose both sales? This becomes even more to the point when consideration is made of the fact that if he is once sold something, no matter what, he increases tremendously in value as a prospect for whatever else the merchandiser may have to offer.

The method used by Nolan Brothers to ascertain the direction in which their advertising must go is simple. This, of course, applies to the greater extent to direct mail efforts, though it does hold true also in local newspaper advertising, when seasonal conditions govern the type of products and services offered. The Nolan mailing list is built in three ways. First from unsolicited inquiries, which also include inquiries sent by recommendation, secondly, from inquiries received from display or newspaper advertising, and lastly, from the occasional employment of canvassers who are paid a fixed amount per name plus a small commission on sales resulting from their canvass.

### THEY ELIMINATE WASTE WORK

Of the first two sources, no names are actually placed upon the mailing list until after a direct canvass has been made by a salesman. It has been found that this is the one way to eliminate wasted effort. Salesmen and canvassers alike fill out a complete card form, which is returned to the office. When it is received, a letter is mailed out to the prospect, a duplicate card is placed in the file and the original given to the salesman. A record of the calls made on the prospect and a list of the mailings made are kept on the duplicate which, until such time as something definite is done on the prospect, remains in the active file. After such a time, or if the oil burner has been sold either by their own organization or that of a competitor, the card, at least as far as oil burners go, is placed in the dead file.

But in the event that a prospect has been contacted and covered regularly by advertising fails to respond to oil burner sales stimulus, then it is considered wasted effort and money to continually talk and advertise oil burners to him. An alternative is tried which has been decided by the contacts made and information picked up. Usually this results in a sale. If not, still another commodity is tried and so on. The point is, whether you are pushing oil burners, refrigerators or accessories, do not let your merchandising efforts stop there. If you do not make a sale on one, try it on something else and do not waste effort and advertising. Both are far too valuable.

T. A. Nolan also "asks them to buy" through the medium of the local newspapers. In commenting on such advertising he says, "We endeavor to tie our efforts up with the advertising run in the metropolitan newspapers by the manufacturers of the oil burner we are handling. In fact, we take advantage of every sales campaign inaugurated by manufacturers of products which we are handling to supplement their efforts with mailings to our preferred list."

### THE SHOWROOM ATTRACTS

Mr. Nolan has long since learned the importance of an interesting and attractive showroom. The same, of course, applies to his window display. The latter is changed at least twice a month and is utilized to the fullest extent in enticing people into the showroom. Fixtures are shown priced "completely installed" and monthly specials are offered such as swing spout faucets, seats, stools, shower curtains, or any other accessory that may possibly have a popular demand. This is done with two ends in view; first, to keep the accessory business

where it belongs, in the plumbing and heating store, and, secondly, the possibility that the sale of such a specialty may always lead to an oil burner prospect.

In the showroom an oil burner has been installed so that an actual working demonstration can be given. It is important to note that this display is a modest one, because Mr. Nolan has adroitly made his demonstrator so that each customer can easily imagine it in his own basement. A neat boiler, a clean cut installation, a small section of imitation tile flooring for the whole to rest upon, nothing more.

### WHY THEY CAN SELL

Now just a word about the attitude of the organization. Nolan believes he is handling the finest oil burner made. So does his sales manager. They believe it so thoroughly and so wholeheartedly that they can prove it to you or themselves, which is infinitely more difficult. If they did not believe it they would give up the agency tomorrow. They also believe that their customers are entitled to a full dollar in value for every dollar spent—even more sometimes when it is necessary. They look on this attitude also as one of the fundamentals of merchandising.

They operate under the theory that one of the finest sales forces possible to build is the one made up of "satisfied customers." If Mrs. X is promised that her burner will be in and operating on a certain day—it will be done. If Mrs. A calls frantically and says that the blankety-blank burner they sold her has broken down and will not operate and then rush out to the job only to find that Mrs. A has forgotten to turn on the switch or fill the tank, they are patient and considerate, and never lose sight of the fact that Mrs. A is after all a housewife, not an oil burner expert. She wants comfort and convenience. They see that she gets it and the result is another sales person for Nolan Bros.

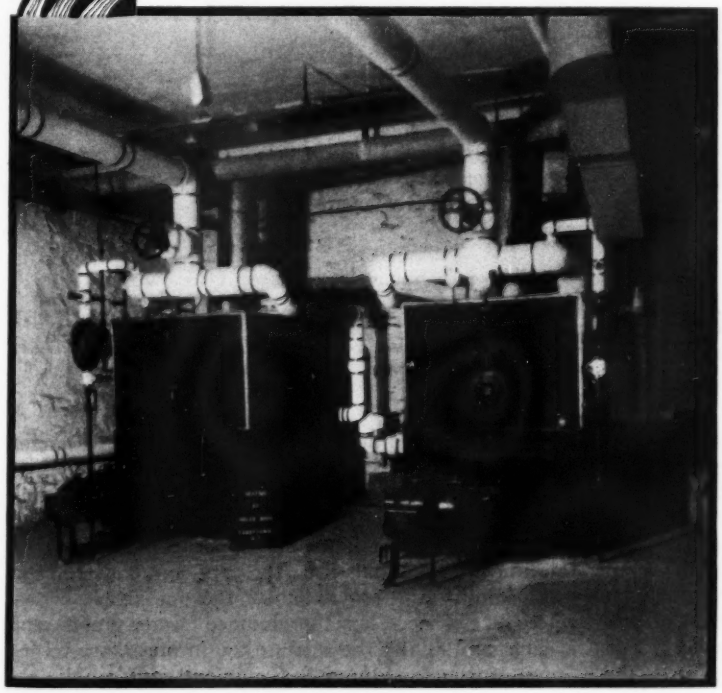
As to credits and credit investigation, here again a difficult situation is handled in the simplest possible manner. The local chamber of commerce has an efficient and inexpensive credit investigation bureau. Full use of this service is made, and the same applies to past due accounts. On overdue bills a courteous but firm form letter is sent to the delinquent informing him that unless the account is paid Nolan Bros. are compelled, in accordance with the rules governing them as members of the chamber of commerce, to furnish to the credit bureau the names of all those who have allowed their bills to lapse. This gets results because it is founded on the maintenance of the credit standing by the individual. Not wishing to endanger his credit with other merchants he is more often than not prompt in making good.

### THEY PROGRESS IN MERCHANDISING

All these chains have been welded together at Nolan Bros., to facilitate their serving the public and consequently to increase the volume of business. They have no magic tricks for selling oil burners, or anything else for that matter, except the ability to develop merchandising to the rule that best fits their particular need and the ability to change such efforts to conform to varying market conditions.

Modern merchandising is a swiftly-changing art, and the retail dealer who wants to keep up with the march of events must keep his eyes open. Not only what is happening in his own field, but what other smart retailers are doing, must govern his own sales efforts so that his competitors will never catch him napping. One sure way of getting ahead in merchandising is to be ever alert for new ideas.

*This does not look like the same basement as pictured on the preceding page—but it is. Nolan Bros. are responsible for the great difference in appearances*



AUTOMATIC HEAT

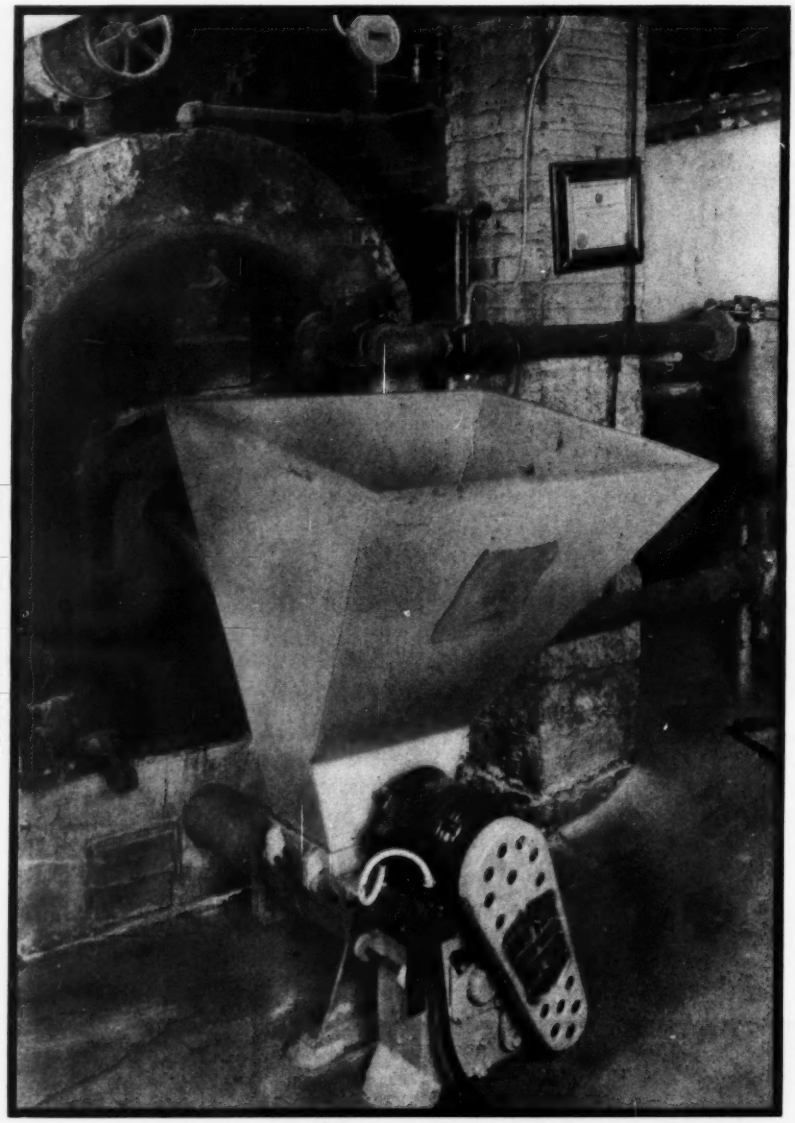


*Fig. 1—This installation is shown as being typical of the work which is done by Wm. Lees, Inc., heating contractors of Chicago. Some of their engineering experiences in making satisfactory stoker installations are described here*

# Engineering for Stoker Installations

By HERBERT K. LEES

THE best stoker prospect oftentimes is the owner who not only expects to reduce his coal bills while enjoying the convenience of automatic firing, but who also expects the automatic firing device to correct and cure other troubles in his heating system, on which the stoker could possibly have no bearing whatever.

In conjunction with each stoker installation, therefore, it is necessary to make a complete survey of the entire system, whether it is used for heating or for power. In determining the actual load, we consider the normal load; the peak load; losses from covered and uncovered piping; hot water load and all items having a bearing on the maximum capacity required.

In the boiler itself, we check the capacity and its relation to the actual load; the type and construction of the boiler and in particular the smokeless types, where it is necessary to remove water-grates and arches; and finally the setting height necessary to get ample furnace volume for efficient and smokeless

# "want to make money?"

THE IRON FIREMAN

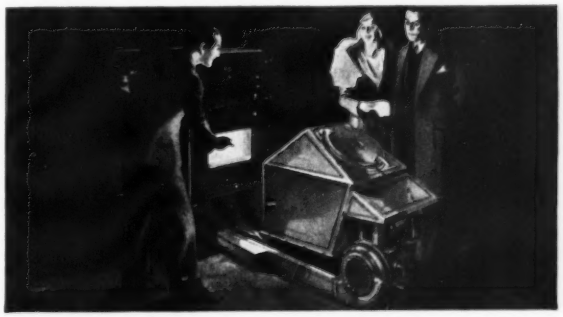
## Join IRON FIREMAN'S money making organization!

An Iron Fireman Automatic Coal Burner makes money for the user because it gives him a better job of firing with less expensive fuel.

Iron Fireman makes money for the dealer because Iron Fireman is instantly recognized as a superior product and the outstanding leader in its field—*it sells easier.*

Iron Fireman makes money for the salesman because the factory does the missionary work for him through aggressive national advertising; and because Iron Fireman is everywhere recognized as a dependable product manufactured by a substantial company.

If you want to make money, consider the automatic coal stoker business. If you consider the stoker business, get into it RIGHT. Sell the stoker that leads in public preference, in sales, in mechanical construction, in performance, and in the number of satisfied customers. In short—*sell Iron Fireman.* List prices range from $275 up. Ask for dealer franchise or retail salesman's proposition. Some excellent money-making opportunities available. Wire or write to Iron Fireman Manufacturing Company, 3170 W. 106th Street, Cleveland, Ohio, or Portland, Oregon.



Iron Fireman's latest achievement—a deluxe model for homes—presents unusual profit possibilities for heating and plumbing men. Sells at a new low price of $275 including automatic controls (installation and freight extra) and on terms as low as $12.50 a month. Iron Fireman sales are hitting new highs on this sensational value in home heating. You can share in the profits of this residential business by joining the Iron Fireman organization—now!

**IRON FIREMAN** *makes money for everybody*

**LEARN WHAT IRON FIREMAN CAN DO FOR YOU**

AUTOMATIC HEAT SECTION

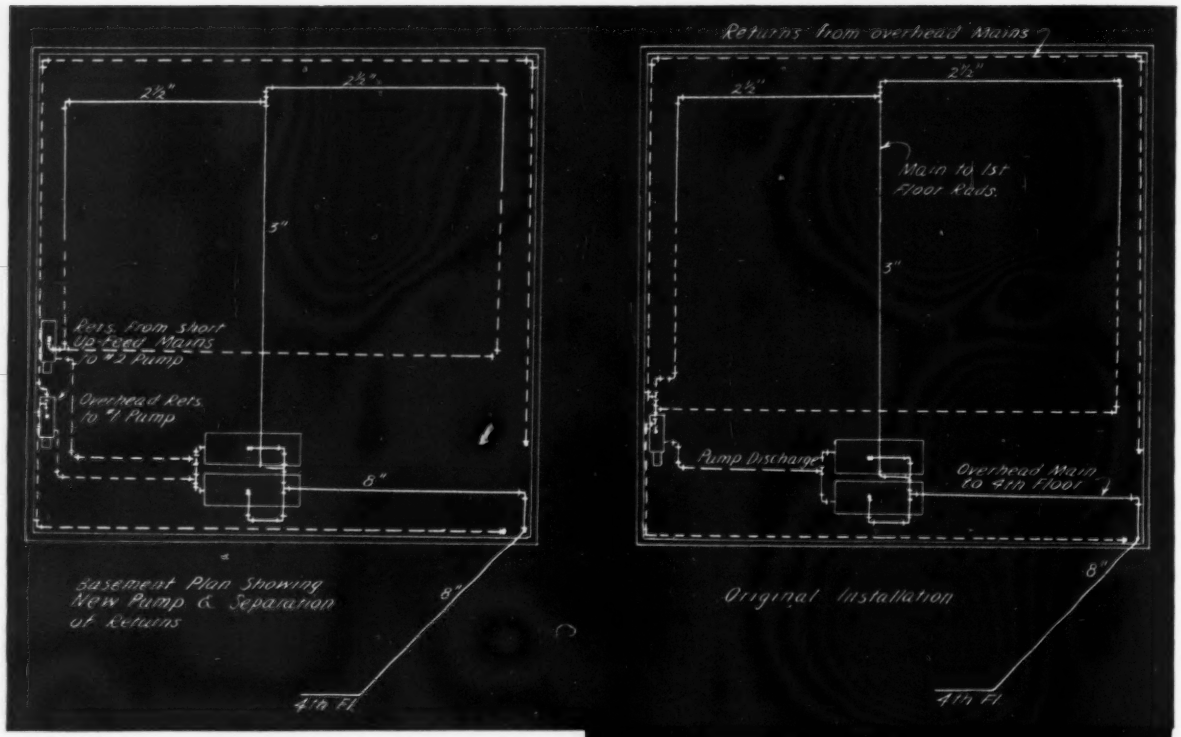



*Fig. 2—Above are the drawings showing the piping arrangements before and after changes were made. In making a satisfactory stoker installation, it was necessary to revise the original heating system and coordinate the stoker and heating equipment so that they operated as a unit*

operation. Knowing the volume of air to be handled under stoker firing to be greater than the amount when hand fired, we make a careful check on the flue area, smoke-pipe and stack height and area.

Beyond all this, however, many owners have back in their minds, some deficiency in the plant, which they probably do not understand, but which they expect the stoker to correct. For this reason, when making a stoker installation, we make a complete survey of the entire heating system, suggesting such changes or additions as are necessary to correct existing evils.

An outstanding example of what is expected of a stoker might be obtained from the installation which recently we made in Chicago, just outside of the "loop" area. The building is heated by two H. R. T. boilers operating at low pressure and the system is generally down-feed, although a basement up-feed main feeds the first floor radiators in a portion of the building. See drawing, Fig. 2, above. From the main steam header to the last radiators on the down-feed system is approximately 250 ft., with a resultant great pressure drop. The up-feed mains supplying the first floor radiators have a comparatively short run, and the pressure drop is much less. Returns from both these mains come back to the same return header, however, and are handled by the same condensation

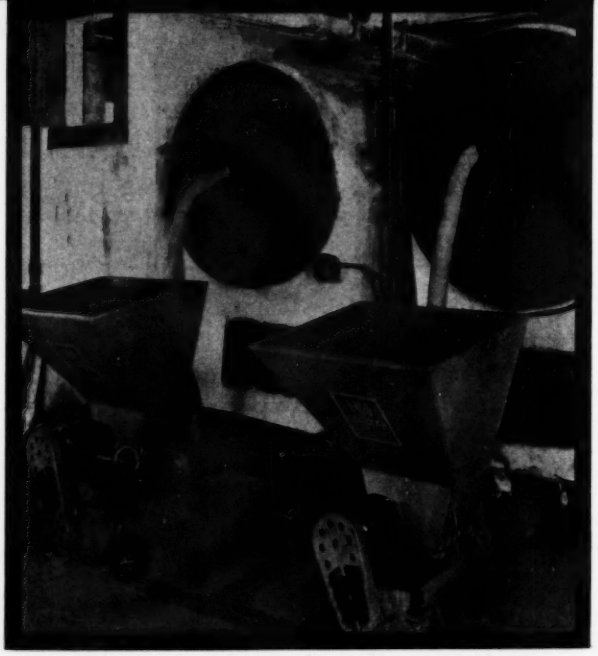


*Fig. 3—This installation is used for heating space and water in the winter and the domestic water supply alone in the summer. In this way the owner's equipment is automatic during the entire year*

pump. It was found that the returns from the short runs came back under pressure and held back the returns from the long mains. Under these conditions, both boilers were operated at all times and a pressure

varying from 5 to 8 lb. was required to be maintained.

In conjunction with the installation of the stoker, our analysis of the conditions showed a second condensation pump was needed. This was installed for two reasons. First, the original pump was undersize, its capacity evidently having been determined by the actual radiation installed rather than the real load; second, the returns from the short runs, coming back under pressure, were holding back the returns from the long runs. The second pump takes care of the returns from the first floor mains only and not only relieves the bucking of the returns, but takes care of the overload on the original pump. When this job was completed and the stoker installed and in operation, a complete run of tests was made. This is a general practice followed by us. It eliminates all guesswork.

### THE OPERATIONS OF THE PLANT AFTER CORRECTIONS WERE MADE

With the installation of the stoker under these conditions, the building now is being heated with one boiler in all average winter weather and with a maximum steam pressure of only 3 lb., as compared to an original required pressure of from 5 to 8 lb. The boilers are operated by the man who runs the elevator, but a constant steam pressure is maintained at all times. The owner claims a fuel saving of 46 per cent over hand firing and gives full credit to the installation of the stoker, but the truth of the matter is that he would have expected these results, even if the other work had not been done. This saving must be credited to the complete job which included the additional pump and changes as well as the stoker.

Another instance where the installation of the stoker was only a solution of a portion of the trouble, is an apartment building located in Oak Park, a suburb of Chicago. See Fig. 3. For heating the domestic

*Fig. 4—Here is the first stoker job installed by the heating contractor whose work is described in this article. Note the blower for forced draft is located on the side on the boiler at the lower right hand corner of the picture*

Do You Know?

AUTOMATIC HEAT

That wisdom in recommending motors for use on stokers, oil burners, refrigerators, and other appliances implies intimate knowledge of motors suitable for such applications?

Here are a few reasons for the widespread adoption of the cradle mounted Leland motor, successfully used in these fields because of its quiet running characteristic:

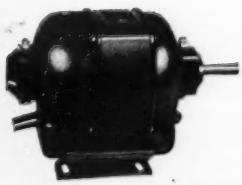
Simple but highly dependable brush-lifting device to eliminate brush noise and wear.

Rubber-impregnated spring mounting to isolate vibration within the frame structure.

Uniform air gaps—an essential of quiet operation.

Inherent quietness — slot ratio chosen for constant permeance, regardless of rotation, making the motor quiet magnetically.

*For amplified discussion of these and other features making for quietness consult Bulletin No. 28*



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Motors

AUTOMATIC HEAT

hot water, an under-size coal fired hot water heater was used in conjunction with a storage tank.

In recommending stokers for this building, we suggested that hot water heaters be installed so that this water could be heated from the firebox boilers heating the building. The hot water tank, being too low for circulation by gravity from the heaters, meant the installation of a hot water circulating pump. Aquastat control was installed, controlling the operation of the pump, so that when the temperature dropped in the storage tank, the pump cut in and circulated the water from the tank, through the heater.

**HEATING CONTRACTORS' REGULATION USED IN STOKER WORK**

The owner has automatic firing during the summer months as well as during the heating season. He maintains a constant supply of domestic hot water heated at the temperature he desires.

We have found that the stoker is quite saleable to the smart owner or building manager, but back of it all on the part of the ones making the sales and installations there must be a solid foundation of engineering experience and the ability to service. Thirty-three years of continuous service in the heating business in Chicago has sold more stokers for us than the name or the national advertising of the manufacturer of the stoker we handle. All guarantees of manufacture and service are made by us as heating contractors direct to the user and he realizes that he will get the same consideration and service as he received when we installed his heating or power plant.

## Survey Shows Only 5% Vacancy in Single-Family Houses

Less than 5 per cent of single-family houses were vacant in two-thirds of the cities reporting in a recent survey of vacancies in residential buildings made by local organizations and reported to the Department of Commerce.

The survey, conducted in 37 cities, shows that single-family houses are more in demand than flats or apartments. In none of these cities did the vacancies exceed 9.5 per cent of the single-family houses. Vacancies in apartments ranged from 6.8 per cent to 27.2 per cent; in flats from 4.4 per cent to 20.2 per cent, and in two-family houses from 3.4 per cent to 20.1 per cent. In no city were total vacancies in all types of residential property more than 11.2 per cent, the survey shows.

## November Stoker Sales Show Seasonal Decline

Stoker sales for November as reported by the U. S. Bureau of Census covering the activities of 21 identical companies showed a decline of 29 per cent from October and more than 33 per cent from September. The November sales reported aggregated 1,038 machines, as against 1,467 for October and 1,527 for September. The total sales of these 21 companies for 11 months were 8,860.

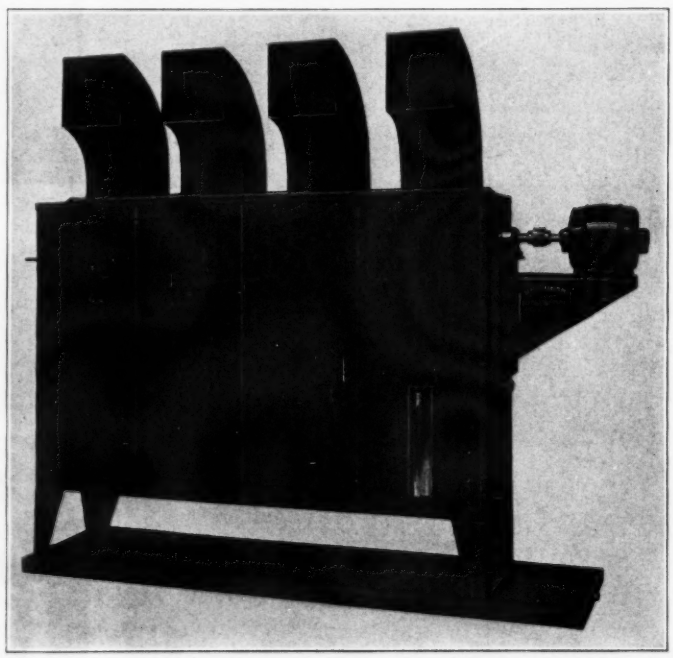

# COOLING FOODS AND OTHER PRODUCTS *ECONOMICALLY!*

THESE new Unitherm Coolers can be used for various types of cooling producing practically any desired temperature—in food and other storage plants, industrial process work, etc.

They have a wide range of refrigerating capacities, discharging the cool air at high velocity near the ceiling and above the product. This cool air diffuses throughout the room. Thus a constant temperature is efficiently maintained.

A Unitherm Cooler requires minimum piping and connections, saving labor and materials. It eliminates costly bunkers or wall coils. And, in case of plant alterations, it can be moved to a new location at small expense.

For full information, write for Bulletin 77. **CLARAGE FAN COMPANY, Kalamazoo, Michigan.**



**CLARAGE**
**UNITHERM COOLERS**

# Co-Operation With Dealer Sells Gas Heating

By WM. MASONER

*This is the new gas boiler which Mr. Masoner has just installed in his showroom for heating his entire building. It serves as a display and its operation is demonstrated*

FROM some of the remarks made you may be led to believe that we have accomplished something out of the ordinary. Many contractors have done as well and better. The average progressive heating contractor is capable of doing the same, if he can be sold, on gas for house heating, as we have been.

Like the majority of contractors, I served my apprenticeship at the trade and worked with the tools as a journeyman steamfitter. Like many mechanics, I had hopes of being a boss some day and of making more money. About nine years ago, I decided to embark in the heating business. I borrowed some money, built an office in my basement, made my wife the office force and the Inland Heating Company, not incorporated, was open for business.

We were fortunate in closing jobs, and more important, in making a net profit on these jobs.

We soon came to the realization that it would be impossible to progress very far in the heating industry, operating from a basement shop. Too few of the public seemed to be aware of the fact that the Inland Heating Company was in the heating business. We decided that our shop must be located on the street, but not necessarily on Main street, so we bought a lot in a location where hardly a hundred pedestrians pass in a day, but on a very busy thoroughfare.

In making our plans for this shop, one of the many requirements was a heating plant.

About that time a gas company supervisor started calling on us. An old-timer, having been with his company for about thirty years. He talked about gas for house heating. He wanted us to sell gas heating equipment. We had just learned a costly lesson with a new fuel and were very skeptical. We questioned his vision of the future, when many homes would be heated with gas. We could not conceive how home owners could be induced to buy it. He, nevertheless, was persistent. Being sold on gas himself, his arguments in its favor carried conviction. Only through his efforts did we finally give it some serious thought.

The possibilities of gas for house heating, from a heating contractor's viewpoint, intrigued us. It meant an entirely new field in home heating. The potential market was tremendous. That it required pioneering was true. It would necessitate more sales effort. Its higher cost would cause greater sales resistance, but gas would be the means for providing convenience, comfort, and cleanliness. The public had always been willing to pay for these advantages when purchasing other requirements for the maintenance of their homes, why wouldn't they pay to have them in conjunction with one of the most essential necessities in the home, that fundamental part of the home, upon which, for the greater portion of the year, depends their health and comfort, the heating plant?

When we considered using gas for heating our

An address at Midwest Gas Sales Conference.

AUTOMATIC HEAT SECTION

*The view at the left shows two more gas burning appliances in Mr. Masoner's home. They are the gas refrigerator and the gas cooking stove. Altogether, this view and the view below show five gas burning appliances*

*At the right is a view of the basement in Mr. Masoner's home. Three of the eleven gas burning appliances which he uses are shown here. At the left is the gas burning clothes dryer. In the center is the gas heated washing machine and at the right is the gas plate for boiling clothes*

new office and shop, we then were prospective gas users. We could view gas heating from the same angle that the public would and use the same arguments that they would.

For our own information we weighed carefully the advantages and disadvantages.

We decided that the many advantages derived from the use of gas outweighed the higher fuel and equipment cost argument against its use.

The final result of our deliberations was the decision to sell gas burning equipment. The possibilities of making a profit on these sales appeared excellent. We were in business only for profit.

### HE CONSIDERED HIMSELF A GAS PROSPECT TO OBTAIN ALL GAS INFORMATION AVAILABLE

The first boiler we sold was to ourselves. We located this boiler on our showroom floor in the front of our shop, where no one could enter without seeing it. It served three purposes. It heated our building, served as a display boiler, and it demonstrated to our customers and many others that it was clean, quiet, and automatic. We could not have kept it there if it had not been.

This boiler, and its performance, helped us in making many sales. Undoubtedly, it helped create the desire for "Heat with gas" in the minds of many people who saw it.

### GAS BOILER IN SHOWROOM SERVES BOTH AS DISPLAY AND OPERATING DEMONSTRATION UNIT

After seven years, that model being obsolete and we still being desirous of having our heating boiler serve as a floor display and a demonstration boiler, we just recently installed one of the new gas boilers with its improvements in design, controls and appearance.

When we attempted to sell gas, we soon found that we had much to learn about the sale and use of gas for house heating. We called on the gas companies for help. The heads of the gas heating departments and their assistants of both the Peoples Gas, Light and Coke Company and the Public Service Company of Northern Illinois, did their very utmost to give us the aid we required. Probably, at that time, they considered us a possible supplementary sales force. By their efforts to help us, they promoted the most friendly relations. They gave us information concerning appliances and equipment that they offered for sale to the public, their sales policies, correct methods of appliance installations, necessary controls, engineering data and fuel costs.

They recommended us to builders of new homes and gave us sales assistance. They obtained our fullest support by permitting us to make a profit on our work.

When just recently the gas companies allowed heating contractors to install all heating and refrigerating appliances sold by them, we believe that they established a spirit of good will and co-operation, not only among the contractors, but all mechanics as well. This favorable influence of some four thousand union steamfitters in Chicago must surely be of some aid in the sale of gas.

In our efforts to co-operate with the gas companies, we found that almost invariably these endeavors resulted in increased business for ourselves. They were as follows:

The appliances we sold were tested and approved. This assured the gas companies' customers efficient equipment.

Our methods of installation conformed to the requirements of the gas companies. That made certain, more satisfied gas users.

We helped build gas load.

### OUTDOOR ADVERTISING PLAYS IMPORTANT PART IN SELLING EFFORTS

Becoming fairly well established, we gained the confidence of many home owners and builders. They consulted us on their heating problems. For most homes we recommended gas. Even when instructed to figure on another fuel, seldom did we fail to give an alternate figure on gas.

Our shop, being located in an isolated spot, is quite conspicuous, the side walls being visible for more than a block. We use these spaces to deliver a message on gas heating. Our window, outlined with neon, displays a gas burning appliance. Our side walls, electric sign, and display window, are illuminated until 1 a. m. A neon sign of the flasher type advertises a gas heating appliance continuously. We also carry signs advertising gas on each of our autos and trucks.

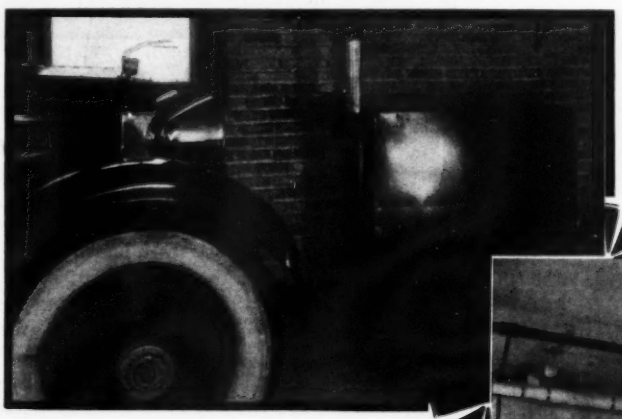
On the floor, our display consists of four gas boilers, three gas conversion burners, and one gas energized refrigerator.

### POINTS USED IN SELLING GAS JOBS REQUIRED TO BE CHANGED

When we first sold gas jobs, with few exceptions they were to well-to-do people. In trying to sell to those that were in more moderate circumstances, we made the mistake of telling them of their wealthy neighbors who were using gas for heating. Their reaction was: "Yes, they are financially able to pay more for their fuel than I. My income is much less than theirs. I cannot afford to burn gas." Usually, they did not buy.

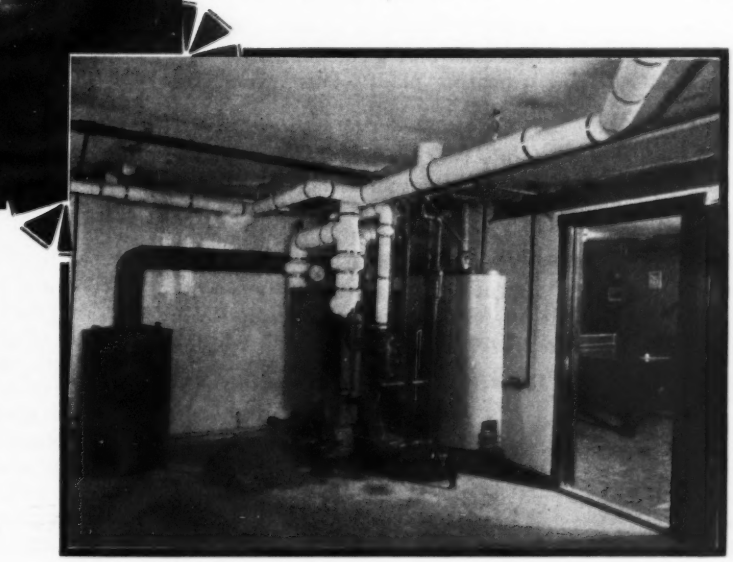
Today, we refer to gas installations for people whose incomes are about the same as theirs, or better yet, those who have even smaller incomes. Our reasoning then is, if they can afford to heat with gas, surely you can.

We had often been told to avoid if possible, the question of fuel cost when selling gas to a prospect. We were advised to talk only of its superiority over other fuels, and the benefits derived in its use. Our

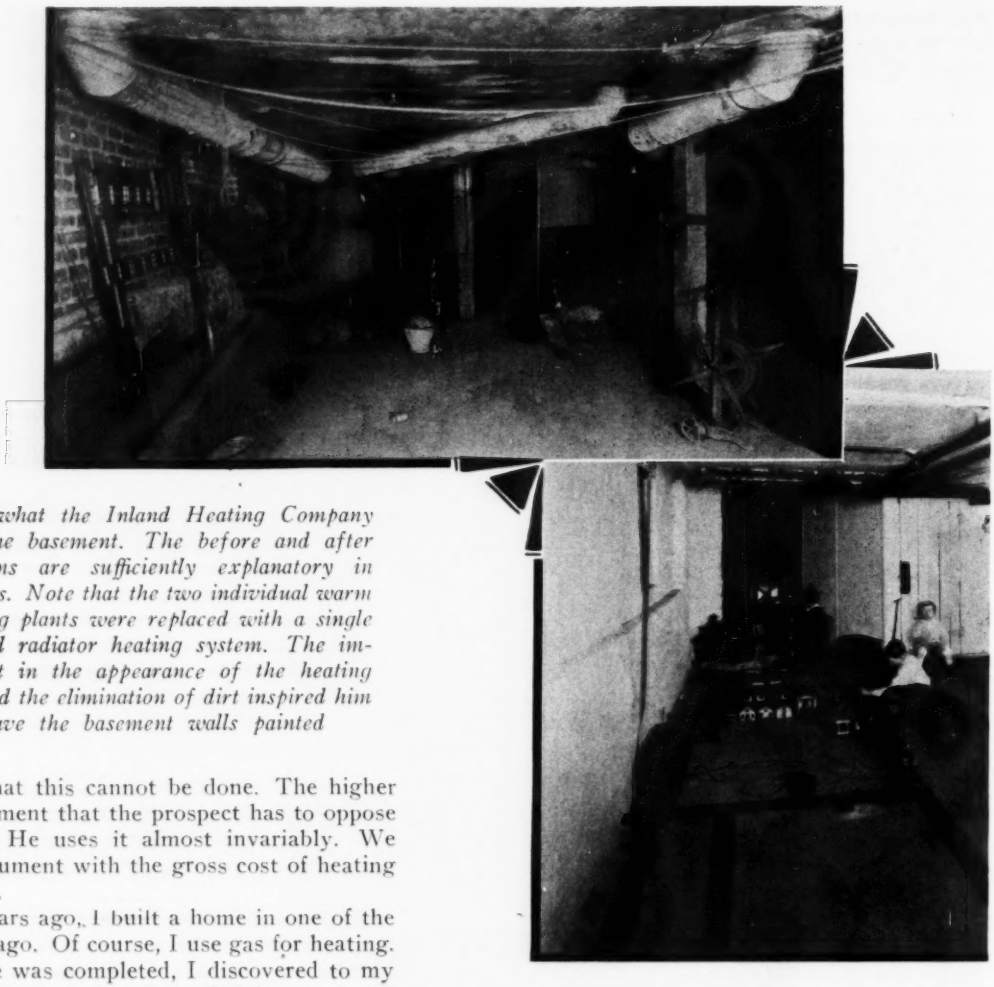


*Above is the gas fired garage heater which is referred to in this article*

*Below is another basement view of Mr. Masoner's home. Here is his gas fired incinerator at the left of the view. The gas heating boiler is at the center with the gas fired water heater at the right. A radiant heater of the gas burning type is located in the fireplace in the recreation room. This illustration shows very clearly the possibilities in basements when gas equipment is installed.*



AUTOMATIC HEAT



*Here is what the Inland Heating Company did in one basement. The before and after illustrations are sufficiently explanatory in themselves. Note that the two individual warm air heating plants were replaced with a single boiler and radiator heating system. The improvement in the appearance of the heating system and the elimination of dirt inspired him to have the basement walls painted*

experience is that this cannot be done. The higher cost is the argument that the prospect has to oppose its acceptance. He uses it almost invariably. We combat this argument with the gross cost of heating with other fuels.

About five years ago, I built a home in one of the suburbs of Chicago. Of course, I use gas for heating. When my home was completed, I discovered to my surprise, that I had purchased the folloiwng: eleven gas burning appliances; a gas boiler; gas stove; gas incinerator; gas water heater; radiant gas heater; gas laundry stove; gas mangle; gas washing machine; gas clothes dryer; gas garage heater and a gas refrigerator.

The following incident occurred about a month ago: A friend informed us that a certain owner was in the market for a heating plant. This owner had already received estimates from four heating contractors on the previous day, but these estimates were unsatisfactory to him. We saw this owner at his place of business, a drug store which he was remodeling. He wanted us to figure on installing three steam radiators, the mains to be extended from the building adjoining. We talked of using a gas fired unit heater instead, which really was the only way that store could have been heated to advantage. He finally asked us to quote him a price, which we did.

### ENGINEERING EXPERIENCE WITH HEATING INSTALLATIONS MADE POSSIBLE THE SALE OF GAS UNIT HEATER

Then he told us that the gas company had recommended and quoted on a unit heater the previous week, but that he had decided, on account of the higher cost, to use radiator heat. He further stated that since we also suggested a unit heater and recommended it so highly, he would give it further consideration. We walked out with the order for a unit heater in our possession. We made a sale, and a pleased customer. The gas company added gas load. The point of this incident that I am attempting to bring out is, that any one of those four heating contractors could have sold that owner a unit heater, had they only suggested it. Their profit would have been at least three times greater than on a radiator job. Why didn't they try to sell a gas unit heater? It is quite likely that they had no information concerning this appliance, or, they may not have been gas-minded. They probably are in need of the same co-operation we received years ago, which we still receive, and require. They, and many more contractors require information, education and assistance in the sale of gas. It is our opinion, that only the gas companies can promote this latent sales force, and that increased appliance sales and gas load will repay them for their efforts. If they adopt a passive attitude toward the heating trade as potential salesmen of gas, it can be interpreted only as a failure to use them as an additional sales force.

I can recall an occasion when a gas company representative whose schooling on gas heating was in-

adequate, would have given us misleading information on one of our gas heating problems, had we been less fortunate in being well informed. Had that salesman given the same misinformation to a contractor with no experience in gas heating, that contractor now probably would be a gas skeptic, and without question, it also would have resulted in a dissatisfied customer being connected to the gas company's mains.

**SUGGESTIONS OFFERED GAS COMPANIES IN CONTACTING THE HEATING TRADE**

In contacting the heating trade, may we offer this suggestion to the gas companies? Selected men to carry the gas heating message who are well grounded in heating, men that can talk heating to heating contractors in their own language. And, most important, select those who have a thorough knowledge of the facts pertaining to their subject, "Gas for house heating." With gas heating in its infancy, most contractors concede their lack of complete information relative to this branch of the heating industry, and are eager for authentic information concerning it.

In our opinion, a gas company representative, well equipped with informative facts, with constructive ideas and a well co-ordinated gas heating story, should not find it difficult to gain the confidence and co-operation of the many progressive heating contractors.

We believe that the three most important factors in determining the total cost of gas heating are, the gas company, the manufacturer of gas burning equipment, and the heating contractor. If gas heating is to bring prosperity to all of them, it will require the concerted endeavors of all three to bring its cost as low as it is economically sound. The lower the cost, the greater the number of people that are financially able to avail themselves of its advantages.

In metropolitan Chicago, this cost has been lowered materially in the past few months. The gas companies have reduced the price of heating gas approximately 30 per cent. The manufacturers improved their products and sold them at lower prices. The Chicago Master Steamfitters Association brought much lower their charges for gas company installation work and for installing appliances sold by themselves. With the co-operative efforts of these three, we are certain that rapid strides in the sale of gas are assured in the Chicago area.

It is my firm belief that in the very near future, the majority of homes will be heated with gas. Not only will gas warm these homes when it is cold, and preserve the food used in them, but gas will keep these homes cool and comfortable when it is hot. I am confident that many glorious things are in store for us, we who place our faith in gas.

## How Manufactured Gas Is Obtained

Manufactured gas is obtained either from the destructive distillation of coal or by the action of superheated steam on hot coke. In the former case, the product is known as coke-oven gas and the latter as blue gas or water gas. Water gas usually is enriched with gaseous hydrocarbons obtained by an oil cracking process.

AUTOMATIC HEAT SECTION

*Install Now*

**BARBER**
***Automatic Jet Gas***
**BURNERS**

**For the Spring Heating Season**

Spring is the most difficult season of the year to maintain an even temperature in the home—With coal it is usually one extreme or the other—either too warm or no heat at all—both of which are most dangerous from a health standpoint and expensive from an economical standpoint.

Your customers and the public are familiar with these facts, therefore it is only necessary to tell them and explain how inexpensive it is to convert coal burning furnaces or boilers into efficient gas heaters with BARBER AUTOMATIC CONVERSION GAS BURNERS and enjoy the Comfort, Cleanliness and Convenience of gas heat.

Another most important feature which will appeal to every housewife—Spring house cleaning can be started any time and finished before warm weather.

*Write today for catalogs and other literature.*

**THE BARBER GAS BURNER CO.**
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AUTOMATIC HEAT SECTION

MORE HEAT

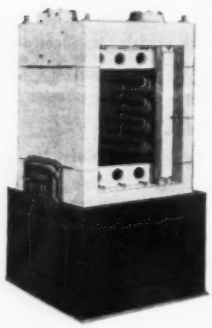
FORAN

IMPROVED COPPER and STEEL

TUBE BOILER

. . . has sales appeal

It's always a delicate job to explain to a prospect that he needs a new boiler. Yet undersized plants cause most of the difficulties of oil burner, automatic stoker, gas burner and coal dealers. You can sell him on ample sized Foran Boilers, however, because you can show him in black and white where he can save its purchase price over and over again in saving in fuel. The remarkable design and location of the water tubes (copper for oil and gas, steel for coal) does the trick.



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Please send me without obligation on my part your free booklet describing Foran Improved Copper and Steel Tube Boilers.

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DESIRABLE TERRITORY AVAILABLE FOR DISTRIBUTORS

# The Combustible Nature of Solid Fuels

It is apparent that the usual tests of coal fail when applied to the determination of the combustible character of the coal. Neither appearance, density, chemical analysis nor location can be used as an indicator. The only positive means of determining the combustible character of a coal before it is put to use is to make a specific test for that particular purpose.

That the determination of the combustible character of the coal is highly essential to its proper utilization cannot be denied. Under hand-firing practice it was possible to blunder along with efficiencies of 50 or 60 per cent without serious complaint but with the increasing employment of automatic burning devices and the increasing use of coke, oil and gas as competitive fuels a coal that is not uniform in combustible character becomes a drag upon the entire practice of coal utilization, for with the absolute necessity of close adjustment and balance between air and coal feed in the automatic burning of coal, any coal that is not uniform in combustibility is immediately condemned.

These statements, as well as the following, have been taken from a paper by R. V. Frost which was presented at the 38th annual meeting of the American Society of Heating and Ventilating Engineers at Cleveland, last January.

Variability in the burning characteristics of coal makes itself evident in variation in the intensity of draft required to maintain a stated rate of combustion, and in the variability with which the fuel will ignite. The burning characteristics of coals are roughly classified as either hard or free burning, but there is no means at present in use by which a coal may accurately be classified as either hard or free burning. Appearance, while commonly used as such, is not an indicator. Neither are hardness, density, chemical analysis, location in the mine area or simple burning tests. Location is perhaps the best indicator, but this is not by any means positive, for frequently samples taken from the same lump are absolutely opposed in their burning characteristics. Sometimes the properties of a coal are so variable that its burning characteristics will change from one shovel to the next, and it is very difficult under the present methods of mining and preparation to obtain coal that is not more or less variable.

In many cases the variability is so extreme that of two samples from the same car compared on the basis of equal draft intensity, one will burn at a rate of combustion five or six times that of the other.

It is easy to imagine what a serious problem such variability in fuel becomes to manufacturers of boliers and automatic coal burning devices. This variability is undoubtedly the cause of many of the complaints raised regarding so-called inadequate boiler ratings and poor chimneys, in which case the boiler manufacturer becomes a party to the complaint. In the stoker industry the seriousness of variable burning characteristics is generally recognized and is regarded with genuine concern.

The correcting of the variability of burning characteristics is of more vital importance to the coal industry than is the production of a low ash coal and of equal importance to uniform sizing, in the anthracite territory.

# *T*he Public wants AUTOMATIC HEAT *if*

THE American public wants automatic heat and will spend millions of dollars for stokers, oil burners, gas heat and their accessories during the next few years *if* automatic heat is offered to it by you, the heating dealer.

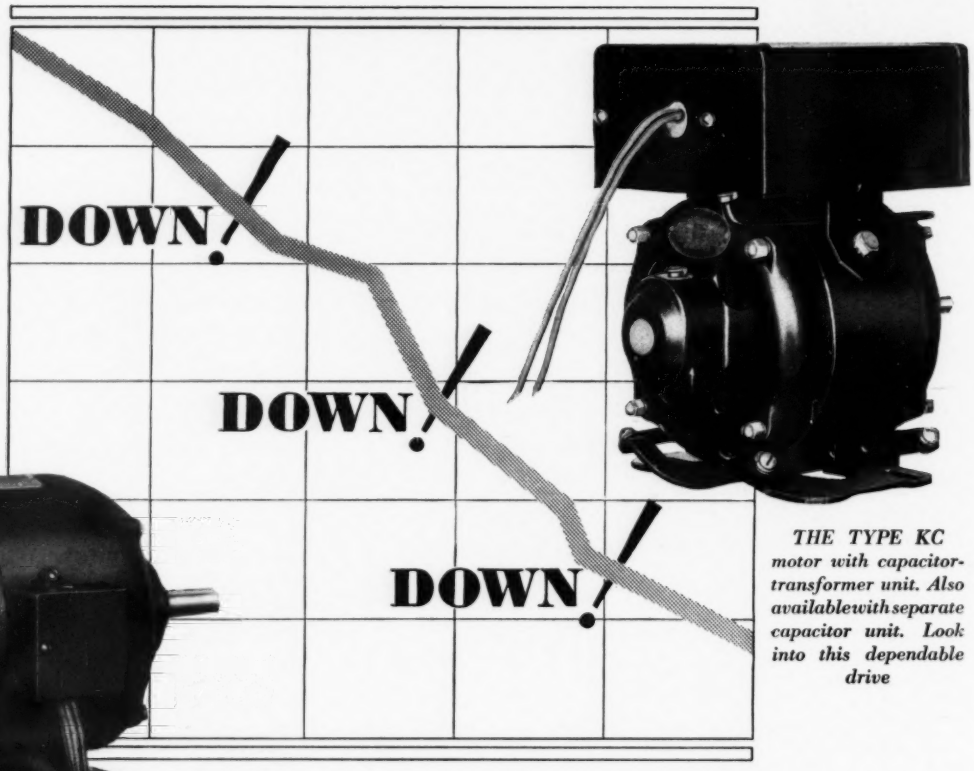
The public wants relief from antiquated methods of firing heating systems but it wants the security of your knowledge of heat and heating systems back of the installations.

The public wants you, its foremost heating dealer with a local responsibility and a local business interest to sell automatic heat to it.

Because we are on the eve of the big swing to automatic heat and because you are already the outstanding dealer in automatic heat, DOMESTIC ENGINEERING is giving you this "publication within a publication" with every issue.

The best of the merchandising, mechanical and financial information on stokers, gas heat and oil burners will be published in AUTOMATIC HEAT in every issue of DOMESTIC ENGINEERING. Watch for it. Read it. Send us your automatic heat questions.

AUTOMATIC HEAT
*in*
*Domestic Engineering*
1900 Prairie Avenue ✦ Chicago, Ill.




*THE TYPE KC motor with capacitor-transformer unit. Also available with separate capacitor unit. Look into this dependable drive*

*THE TYPE KH resistance split-phase motor equally dependable and efficient. Ask about it*

# go your service problems

## when you specify G-E motors

WITH a General Electric motor—available in a wide variety of types and ratings—on your oil burner, the graph of your service complaints approaches zero.

Specify G-E motors. You will find that they meet the torque requirements of your product. You will find them "cost-low" in maintenance, long-lived, and dependable. Backed by years of experience—endowed with the unparalleled acceptance everywhere accorded G-E products—they represent one of the soundest equipment values on today's market.

Call in a G-E motor specialist; he will be glad to coöperate with you in the solution of your drive problems.

JOIN THE "G-E CIRCLE"—SUNDAYS AT 5:30 P. M. E. S. T. ON N. B. C. NETWORK OF 54 STATIONS—WEEK-DAYS (EXCEPT SATURDAY) AT NOON

210-176

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

## ENGLISH ENGINEER EXPLAINS PANEL HEATING

A. H. Barker

W. W. Timmis, manager of the New York office of C. A. Dunham Co., Chicago, Ill., acted as host Feb. 18, at a luncheon given at the Biltmore Hotel, New York City, to A. H. Barker, eminent English heating engineer, his son, H. P. Barker, and a group of distinguished heating engineers.

Mr. Barker, said to be the world's leading exponent of panel heating, gave an informal but highly interesting resumé of the talk he recently made before the American Society of Heating and Ventilating Engineers at its last convention in Cleveland.

Illustrating his remarks with slides, he presented and explained numerous panel heating installations now completed and in operation in England. He pointed out that there were at present approximately twenty thousand such heating systems in use in the Empire.

Beginning his talk with a short explanation of the fundamental differences between the effects of radiant heating and of convection heating, he told many interesting facts about the methods of heat introduction, human comfort and particularly the inadequacies of the thermometer as a medium of measuring or controlling heat when comfort is concerned. He showed in pictures of actual installations how, by placing the heating panels in the ceilings and walls and having them reflect their heat into the room much the same as light is reflected from a mirror, that the occupants in the room could be in perfect comfort even though the thermometer registered temperatures as low as fifty degrees. In many schools in England where panel heating is used, children dressed in ordinary weight clothing experience no discomfort, he said, even though excessively large windows the full length of both side walls are kept open at all times. In spite of this it is claimed by Mr. Barker that fuel consumption is less.

Even temperatures in any part of the room were also pictured as among the advantages of this type heating. It was interesting to note that while these panels, which consist of large, flat metal plates, heated either by a system of pipe coils or electricity at their back, reach high temperatures (120 deg. F. to well over 200 deg. F.), the thermometer temperature of the room, he said, never becomes excessive.

In experimenting with a means to control and regulate panel heating, Mr. Barker explained many of the difficulties with which he and his son were confronted. These were numerous of course and included installation, but consisted mostly of control. In order to solve this latter phase it was necessary to upset all commonly existing theories of human comfort heat measurement. The thermometer measured the heat loss in the room. Mr. Barker became convinced that it was necessary to measure the heat loss of the human body instead.

With the aid of his son, H. P. Barker, the eupatheoscope-stat and graph was developed. H. P. Barker explained in detail the principles and action of this interesting instrument. Consisting of a hollow metal sphere, it is brought to the relatively corresponding temperature of the human body by the application of heat to its medium of control, which is methyl chloride or some like material, which the sphere contains. This material vaporizes and as the temperature of the walls of the sphere drops, condensation takes place and the rate of this condensation is the accurate method of measurement of the human body heat loss. The heating system, consequently, instead of being turned off or on by the rise or fall of the temperature of the room, is said to be governed entirely by the actual needs of the persons in the room.

After the talks by Mr. Barker and his son, several of the engineers present asked numerous questions regarding minor and major details. The guests present were: John Lowry; C. E. Daniel, Moray & Waller; J. A. Fouilhoux, Hood & Fouilhoux; D. H. Hunt, Krey & Hunt; A. B. Grantham, H. J. Lindeberg; H. A. Eken, vice president, Starrett Bros. & Eken; D. B. Thompson, chief mechanical engineer, New York Central railroad; Louis Ortner, City Hospital; S. Haar and C. Mazzeau, board of transportation, New York City; B. H. Belknap, Brown, Wheelock & Harris; A. J. Courtenay, Cross & Brown; W. H. Driscoll, vice president, Thompson-Starrett Co., engineers; C. A. Fuller, Slocum & Fuller; W. J. Baldwin and L. S. Phillips, New York Steam Corp.; J. W. Deegan; C. T. Coley; J. G. Eadie, Freund & Campbell; Harold F. Alt; Lewis Smith and Joseph Lawler, C. A. Dunham Co.; C. S. Greishaber, Delano & Aldrich; G. B. Panero, Hegeman Harris; Homer Addams; R. A. Wolff, Wolff & Munier; Fred R. Still, American Blower Co.; Clyde R. Place; C. L. Riley, Clark, McMullin & Riley; E. T. Lyle, Carrier Engineering Corp.; Walter Fleisher; A. L. Jaros, Jaros & Baum; A. G. Syska, Syska & Hennessy; H. R. Dowswell, Shreve, Lamb & Harmon.

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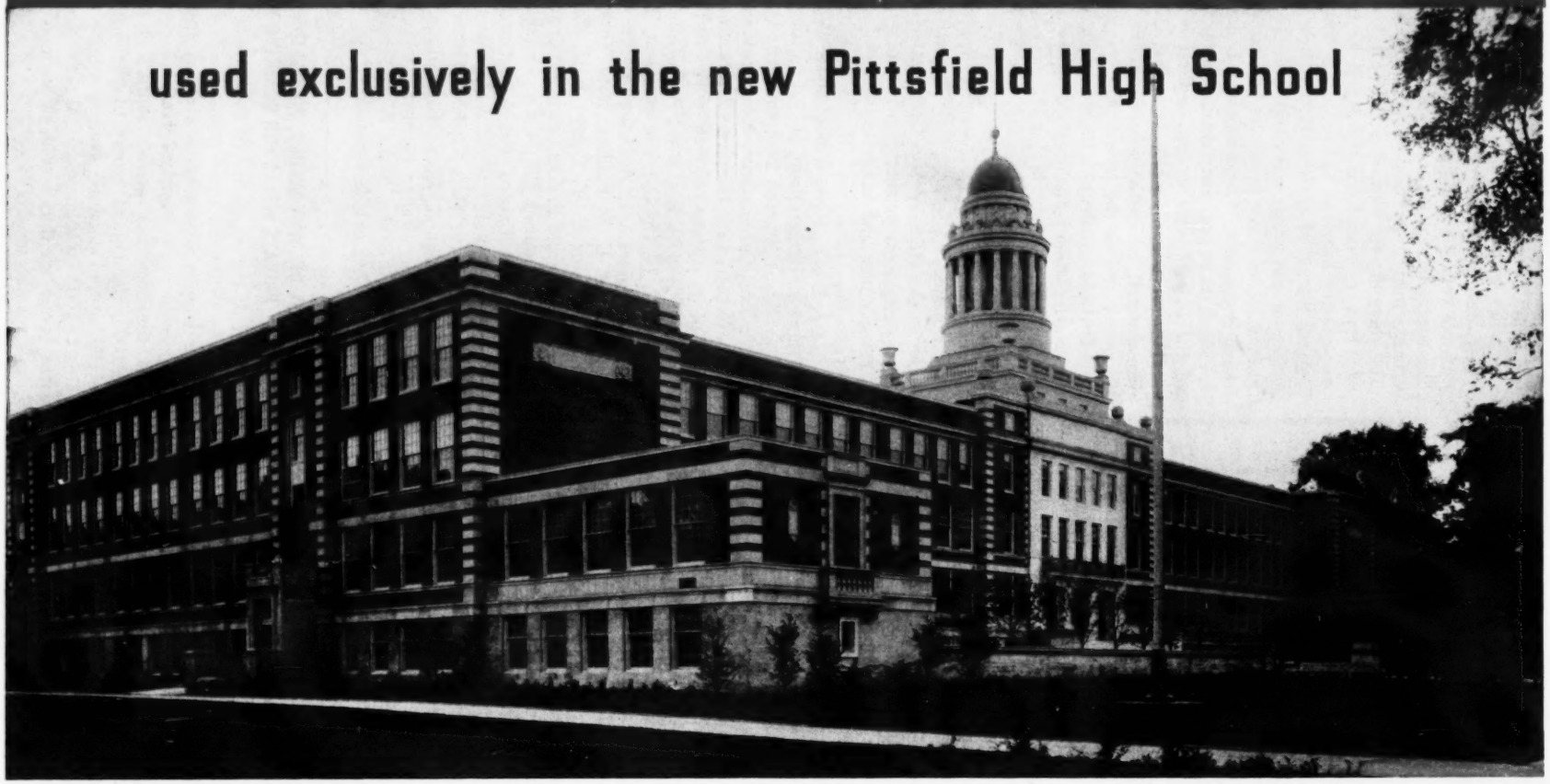
## ONE-HALF OF WISCONSIN'S POPULATION DEPENDS ON PRIVATE WELLS FOR DRINKING WATER

Half of the population of the state of Wisconsin still remains dependent upon private wells for its drinking water supply, according to a report just issued by the Wisconsin State Board of Health.

Estimating these private sources at a state total of 300,000, the annual report of the board's bureau of plumbing and domestic sanitary engineering announced that 193,000 farm homes, 6,000 resorts, and 10,000 summer homes are thus served, in addition to villages having no water supply.

# SPANG WELDED STEEL PIPE

## used exclusively in the new Pittsfield High School



**SPANS**
**WELDED STEEL PIPE**

The new and beautiful High School Building in Pittsfield, Mass., shown above, is the inspired architectural conception of J. D. LeLand Company of Boston with whom R. D. Kimball Company, Engineers and V. J. Kenneally Company, the heating contractors collaborated. It is a typical example of the preference and confidence "Spang" Welded Steel Pipe enjoys among leading architects and contractors the country over.

**SPANG, CHALFANT & CO., INC.**
GENERAL OFFICES, CLARK BUILDING
PITTSBURGH, PA.

*Sales Offices:* New York, Boston, Pittsburgh, Chicago, St. Louis, Tulsa, Los Angeles, Dallas, San Francisco
*Welded Mills:* Etna, Penna., Sharpsburg, Penna.
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# MARKETS

## BUSINESS REPORTS FROM LARGE JOBBING CENTERS

MANUFACTURERS, wholesalers and contractors interviewed during the past fortnight were almost unanimous in stating that demand for plumbing and heating materials showed little change during the period in comparison with the preceding two weeks. Consumption requirements are light and, as a result, the movement of material from wholesalers' stocks is irregular. Buyers for wholesale houses, according to reports, are confining their purchases, for the most part, to immediate requirements. As a result, orders reaching manufacturers are usually for small quantities on which quick shipment is requested.

The trend toward lower wage scales for building mechanics, which seems from reports to be spreading to many sections of the country, is expected by many authorities on construction matters to help considerably in bringing about an early revival of building. Already, according to a recent report from F. W. Dodge Corp., wage reductions have occurred in at least fifteen cities in the country, having a population of 100,000 or more.

No reports have been received from manufacturers since our last review appeared of changes in their published prices to wholesalers.

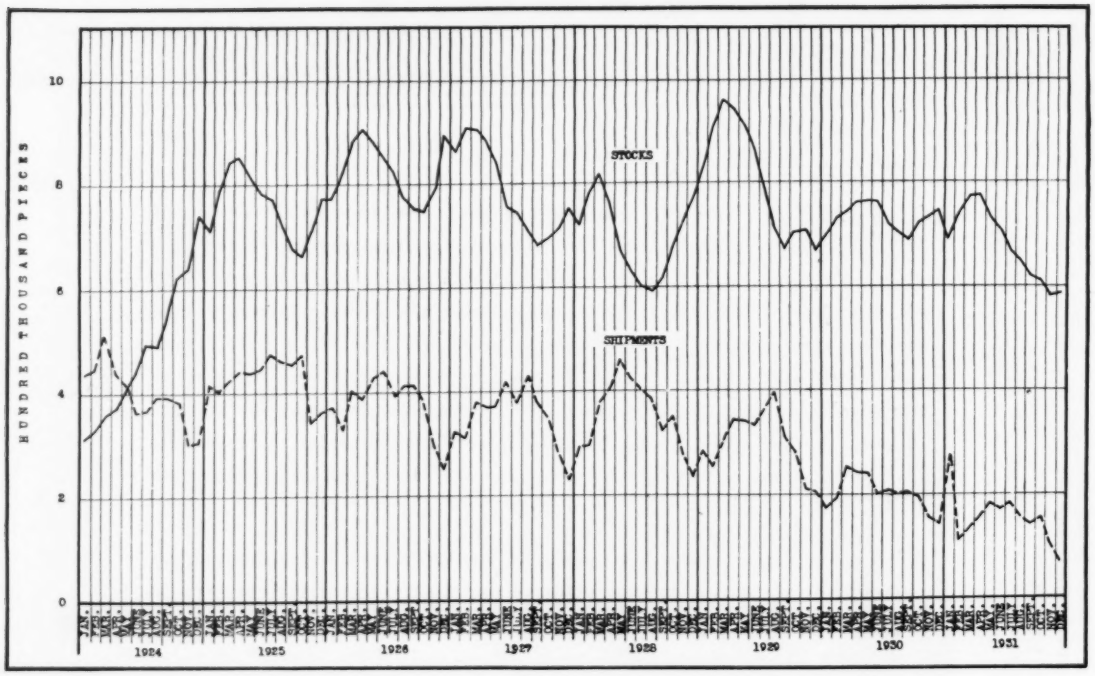
Construction contracts awarded in the first fifteen days of February in the 37 states east of the Rockies amounted to $55,028,500, according to the F. W. Dodge Corporation. Nonresidential building led among the three major construction classes with $21,857,800. With a total valuation of $21,219,000, heavy engineering contracts in the United States for the week just ending registered a gain over the preceding week, according to the Engineering News-Record. The week's total compares with a valuation of $10,656,000 in the preceding week and $34,678,000 for the same period in 1931.

January wholesale prices of six standard plumbing fixtures for a six-room house, ascertained by the Bureau of the Census from reports of twelve representative manufacturers and wholesalers, averaged $88.32 as compared with $93.52 in December, $99.26 in January, 1931, and $100.55 in January, 1930.

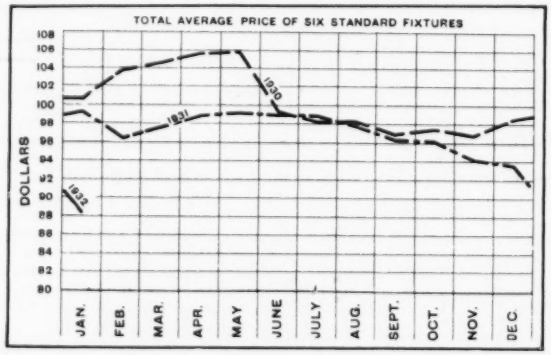
On the following page is a graph which indicates the total average price of these six plumbing fixtures monthly for the past two years. Also on that page are several other charts dealing with the movement of plumbing and heating products.

## Enameled Sanitary Ware

*(Shipments and Stocks)*

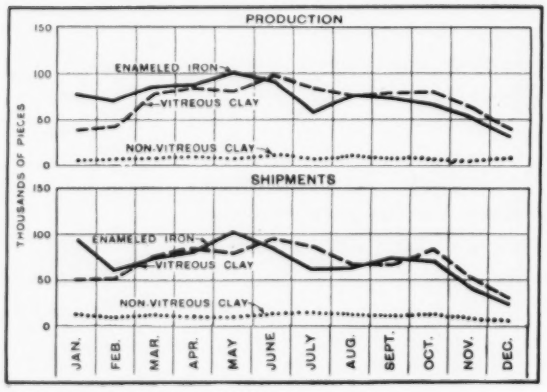



## Wholesale Prices of Plumbing Fixtures



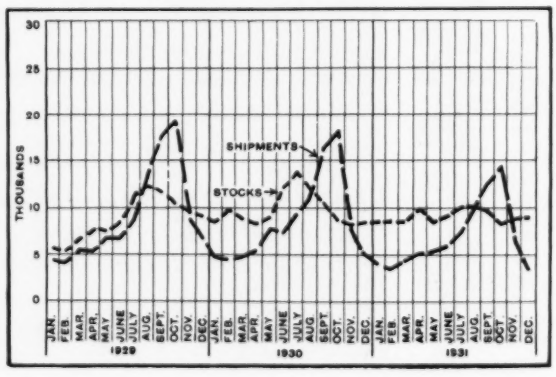

## Bathroom Accessories

*(Recessed and Attachable)*

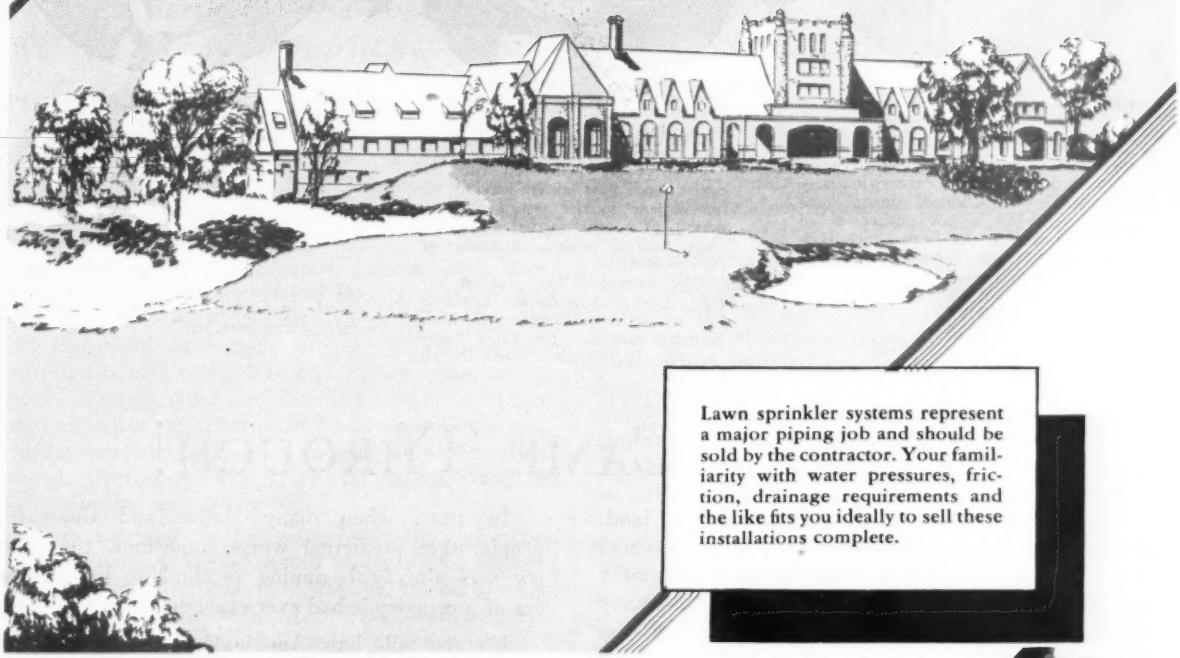



## Oil Burners

*(Shipments and Stocks)*



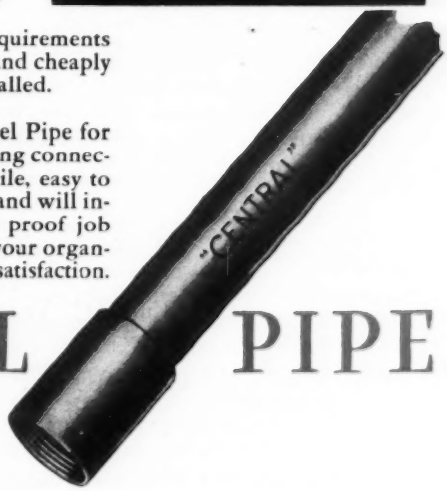
THOUSANDS OF LAWN SPRINKLER SYSTEMS FOR THE LARGER RESIDENCES, ESTATES, GOLF CLUBS, ETC. WILL BE SOLD THIS YEAR, — WHAT WILL YOUR SHARE OF THIS MARKET BE?



Lawn sprinkler systems represent a major piping job and should be sold by the contractor. Your familiarity with water pressures, friction, drainage requirements and the like fits you ideally to sell these installations complete.

Just walk down the better residential streets of your community and make a note of the number of lawns on which the owner has spent considerable time and money on their upkeep —and who takes real pride in the appearance of his property. The result will be a list of likely prospects for water sprinkling systems. Cultivate these owners,—send them some literature about the sprinkling system you think best meets their requirements —show them how easily and cheaply such a system can be installed.

Then use "Central" Steel Pipe for all your underground piping connections,—it is soft and ductile, easy to bend, work and thread,—and will insure a first class trouble proof job that will reflect credit on your organization and insure lasting satisfaction.




# CENTRAL STEEL PIPE

*Your "Central" Jobber will be glad to cooperate with you. Phone him today.*

CENTRAL TUBE COMPANY
PITTSBURGH, PA.

# THEIR Confidence was Justified

WHEN 169 RAILROADS FAILED IN 1893 JOHN H. PATTERSON SAID:

"The year has been unparalleled in the history of the United States. Great questions were to be solved, every industry was stagnant. Some closed down, some lost courage, while a few pushed ahead and worked harder than ever with confidence in the future. We did not let the hard times interfere with our work. When times got duller, we advertised the more and worked the harder."

WHEN PIG IRON DROPPED 50% IN 1907, ANDREW CARNEGIE DECLARED:

'This panic will soon run its course and pass away leaving no impediment to the return, in due season, of another period of wholesome, because needed, expansion of our resources. . . .

"We have had the greatest expansion of modern times. Reaction had to come—will prove healthful. Nothing can stay the rapid progress of the Republic. She is all right."

WHEN DEEP, DARK GLOOM RULED IN 1921, THOMAS FORTUNE RYAN SAID:

"Our mechants have been buying only what they can sell quickly for cash. The consumer has had to listen to so much pessimistic talk that he buys only what is absolutely necessary. People everywhere have been scared. They are getting over that.

"Our people are the greatest consumers of food and manufactured articles in the world in normal times—and normal times are coming back. . . ."

## AMERICA CAME THROUGH!

In 1893 stark ruin stalked through the land. 467 banks failed in a few months. Mills, furnaces and factories shut down everywhere. Bankruptcy was on every hand. America had twice as many unemployed per thousand population as she has today. But she put them all back to work.

In 1907 panic broke loose. The production of pig iron dropped 50% in less than a year. All but the strongest men lost heart—"We are ruined," they declared, "recovery cannot come in our time." Yet in two years prosperity had returned.

In 1921, when many honest and thoughtful people were predicting worse conditions, the country was already beginning to climb to the greatest era of prosperity it had ever experienced.

History tells how America has fought and won 19 major depressions. Good times always follow hard times, as surely as day follows night. Prosperity always comes back. It is coming back *this* time, too.

Above all things, let us have faith.

## America Has Beaten 19 Major Depressions
## She will Beat this one

THE NATIONAL PUBLISHERS ASSOCIATION

*"As the most nearly self-contained nation, we have within our own boundaries the elemental factors for recovery."*

(From the Recommendations of the Committee on Unemployment Plans and Suggestions of the President's Organization on Unemployment Relief.)

## HEATING CONTRACTORS PLAN BIG ANNUAL CONVENTION

### *Sales Promotion Program Will Be Feature of Meeting in Detroit, Mich.*

Unusual interest is being shown in the forthcoming annual convention of the Heating and Piping Contractors National Association, because of the aggressive sales promotion program which the organization is fostering for 1932. The convention will be held in Detroit, Mich., May 16 to 18.

With the slogan, "See them, tell them; show them, sell them," the National Association is determined to make 1932 a big sales year for its members. Four distinct campaigns have been outlined. The Inspection Campaign is now under way and will continue through March. During April and May the new building campaign will enlist the attention of members while the modernizing campaign will start in August and continue through September. The accessories campaign will run during October and November.

Details for these various campaigns will be discussed at the convention. Other topics which will be featured on the convention program are welding, standardization, boiler ratings, air conditioning, pre-qualification of bidders, separation of contracts, trade promotion, etc.

Following is the membership of the convention committee: George Freyn, chairman, Edw. Glanz, Emery E. Harris, Emmet Byrnes, L. L. McConachie, Clarence A. Davis, Harry O. Nelson, Charles Gallarno, and Mrs. R. L. Spitzley. The committee has established headquarters in room 1019 of the Free Press Building.

Mr. Freyn stresses the fact that the attendance at the convention is not limited to members of the Heating and Piping Contractors National Association.

#### TENNESSEE SETS CONVENTION DATES

The Associated Master Plumbers of Tennessee will hold their annual state convention in Memphis, on May 2 and 3. Headquarters for the meeting will be at the Peabody hotel. Percy R. Todd of Memphis is president of the state association and R. L. Farrar of Nashville is secretary.

## SMALL HOUSE CONSTRUCTION GAINS IN NEW YORK CITY

### *1931 Building Records Show 15 Per Cent Increase in Residential Work*

A striking evidence of activity in small-house building is shown by 1931 figures in this class of construction in the metropolitan district of New York, according to a report of the building conditions committee of the New York Building Congress made by Thomas S. Holden, vice president of the F. W. Dodge Corp. Advances both in dollar valuation and in square footage over these same designations for 1930 indicate that a revival of building was well under way in this field when it was slowed up by depressive financial factors, national and international, during August's dog-days, says the statement. To absence of business confidence during the remainder of 1931 is attributed the failure to regain revival momentum.

An increase in square footage in one and two family houses for 1931 is reported in the figures of 40,696,800-sq. ft., valued at $158,190,700 as compared with 31,820,300-sq. ft., valued at $137,821,000 in 1930. This 15 per cent advance was attained for the most part in the beginning of the year, a month by month study showing a definite crescendo from January through May with a lag during June, July, and August and a definite recession after August.

Total residential building (including small houses, apartments and hotels) formed 41 per cent of all construction in the area for the year.

#### LOOKS FOR RESIDENTIAL GAIN IN WISCONSIN

Truman S. Morgan, president of the F. W. Dodge Corp., looks for Milwaukee and Wisconsin to lead other sections of the country up into home building activity at an early date, according to the "Milwaukee Journal." The Journal quotes Mr. Morgan as follows:

"In 1931 construction totaling $76,000,000 went forward in Wisconsin," he said. "Of that amount, $21,569,000 was for one and two-family houses. In Milwaukee, $7,318,000 was spent in residence building, while the total for all construction was $21,409,000.

"A careful study of 37 states east of the Rockies by

our statistical division, shows Wisconsin as one of the states where an early recovery in residential building seems probable."

## DELAY WAGE REDUCTION FOR CHICAGO BUILDING MECHANICS

The new schedule of basic wage rates in the building industry in Chicago, providing a 20 per cent reduction on all labor costs, will not become effective until March 11. The new one year contract was scheduled to go into effect March 1 when it was signed two weeks ago.

Announcement of the postponement was made by the joint arbitration boards of the Chicago Building Construction Employers' Association and the Chicago Building Trades Council. The delay was blamed on the fact that several of the joint arbitration boards of the individual unions have not yet approved the agreement.

It was learned recently that approximately 14 unions, comprising practically all of the basic trades, have either signed the agreement or have ratified the terms. Only two of the basic trades are holding out.

The journeymen plumbers and electricians have offered in place of the agreement, a substitute proposal of a 10 per cent reduction on new construction and a 25 per cent reduction on remodeling and repair work.

## TEXAS CONVENTION TO BE HELD IN SAN ANTONIO

The annual convention of the Associated Master Plumbers of Texas will be held in San Antonio on April 18 and 19, according to word just recevied from Richard G. Thomas of that city, National director. Headquarters for the meeting will be at the Blue Bonnett hotel. W. H. Warren of Houston is president of the Texas state association and J. W. Thiel, also of Houston, is state secretary.

## COLORADO CONVENTION DATE IS ANNOUNCED

Ben Bernzen of Boulder, president of the Colorado Society of Sanitary and Heating Engineers, has announced that the organization's annual convention will be held in Denver, on Tuesday, April 26, at the Albany hotel. Instead of the usual two-day convention this year's meeting will be limited to one day of strictly business discussion. At the close of the business session, the usual banquet, entertainment and ball will take place.

The appointment of the executive committee of the Colorado society was recently announced as follows: J. M. Boies, Ft. Morgan; J. P. Brickey, Denver; E. L. Moore, Longmont; E. H. Horton, Greeley; L. R. O'Rear, Denver; R. M. Small, Denver; John H. Woehler, Greeley; J. J. Wafer, Denver, and E. B. Clayton, Denver.

## LOUISIANA-MISSISSIPPI MASTERS ANNOUNCE CONVENTION PLANS

On Friday and Saturday, April 22 and 23, the Louisiana-Mississippi association will hold its annual convention at Mandeville, La. Headquarters will be at the St. Tammany hotel. Officers of the Louisiana-Mississippi Association of Plumbing and Heating Dealers are C. A. Hunter, Alexandria, La., president; B. L. Knost, Pass Christian, Miss., vice president; L. C. de Leon, New Orleans, La., secretary-treasurer; E. L. Kimble, New Orleans, assistant secretary. The board of directors consists of Ray T. Craft, Lake Charles, La.; J. P. Davis, Jackson, Miss.; A. H. Grimaldi, New Orleans, La.; J. F. McClellan, Monroe, La.; C. O. Rundle, Shreveport, La.

## SHORT COURSE ON AIR CONDITIONING AND HEATING TO BE HELD AT MICHIGAN STATE COLLEGE

The mechanical engineering department of Michigan State College of Agriculture and Applied Science, East Lansing, Mich., will hold a three-day short course covering the subjects of forced warm air heating and air conditioning on March 22, 23 and 24. The program has just about been completed, and, according to plans, practical men will lead the various discussions. Professor Lorin G. Miller, who is in charge of the course, has requested that registrations be made at an early date. The registration charge of five dollars includes the banquet and free psychrometer.

Among the subjects to be discussed are: 1. "Importance of Analyzing Building Structures." 2. "Use of Coefficients or Factors and How to Find Them." 3. "Infiltration and Btu. Methods of Calculation." 4. "Duct Design and Layout." 5. "Air Flow." 6. "Air Conditioning—Humidity, Washing, Filtering and Cooling."

### YOUR ASSOCIATION IN GOOD TIMES AND BAD

BY J. LAWRENCE DE NEILLE

*Treasurer and chairman, membership committee, Heating and Piping Contractors National Association*

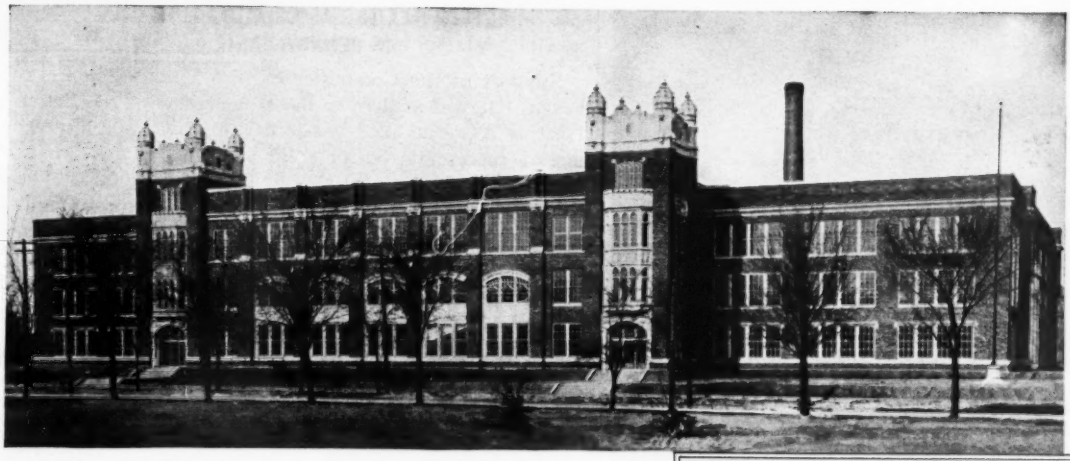
*Lots of men in our industry look upon their trade association as a fair weather activity—something to play with when times are good, when money is plentiful and when they have nothing to worry about.*

*To my mind that is just when an association has the least value. Anyone can pilot the ship in mid-ocean with the weather mild and balmy. When storms come, when we are near the rocks we want all the help we can get and then is the time in the business world that our association work can really be made to count. These times of stress make valuable the fellowship and joint activities of the association.*

*The business man who is looking ahead realizes that there are still many economic problems to be solved and he is planning to work through his association to solve them. He realizes that alone he can do little, but that what he can do multiplied by the entire membership of the association makes possible many worth while accomplishments. He may be forced to reduce expenditures in many ways but his association membership he will save because he realizes it is one of his worth while tools.*

## OKLAHOMA CHANGES CONVENTION DATES

The dates for the annual convention of the Oklahoma State Association of Master Plumbers have been changed to April 25 and 26, according to word just received from H. L. Mason of Tulsa, state secretary. The meeting will be held in Enid, Okla., with headquarters at the Youngblood hotel. The change in dates was made in order to avoid a conflict with the Missouri state convention.



# Fine schools deserve fine plumbing fixtures

Educational institutions are judged not merely by their classroom accomplishments but by their appointments. Not only faculties *but facilities* must be of recognized worth and in keeping with this thought Te-Pe-Co recommends the Penn Blow Out Urinal for Toilet rooms where it is desired to keep all piping above the floor. It affords ample room—measuring 18 inches in width, is cleanly, durable and *cannot be clogged.*

Its flushing rim, large water surface and jet action assure a positive and thorough cleansing of the entire inner surface. The entire trapway being larger than its opening in the bowl will obviously pass anything that enters it. Projecting but 13 inches from the wall it requires little floor space and leaves a clear unobstructed floor that is easy to keep clean.

Merchant Master Plumbers are sure to find many worth while ideas relative to school sanitation by submitting to our Engineers their specific problems.

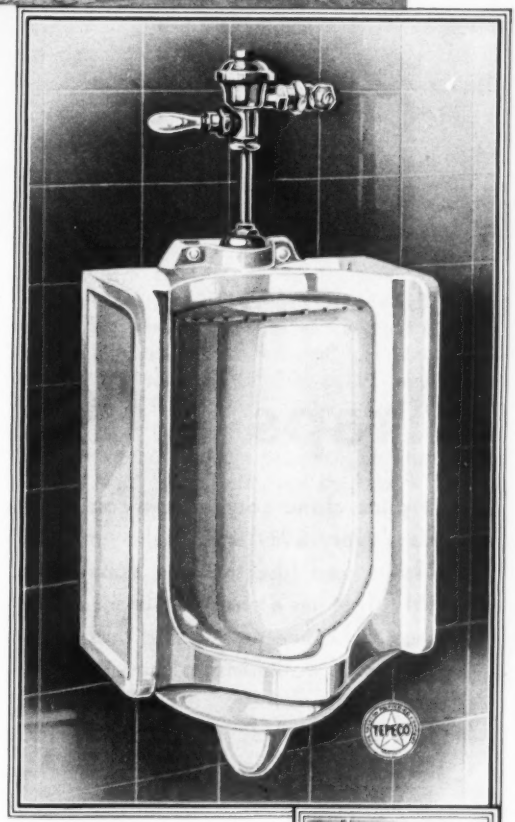
THE TRENTON POTTERIES COMPANY
Trenton, New Jersey, U. S. A.

*Showrooms:*
New York City, 101 Park Avenue, Entrance on 41st St.
Philadelphia, Architects' Building, 17th & Sansom Sts.
*Branch Offices:* Boston, Chicago
*Export Office:* 115 Broad Street, New York City

# TE-PE-CO

## *All Clay Plumbing Fixtures*

OUR GUARANTEE . . . *We make but one grade of ware—the best that can be produced—and sell it at reasonable prices. We sell no seconds or culls. Our ware is guaranteed to be equal in quality and durability to any sanitary ware made in the world. The Te-Pe-Co trade mark is found on all goods manufactured by us and is your guarantee that you have received that for which you have paid.*

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## BETTER HEATING ASSOCIATION IS FORMED IN PENNSYLVANIA

Support of the Committee of Ten activities in Pittsburgh, Pa., was assured in the organization of the Better Heating Association of Western Pennsylvania at a meeting of representatives of solid fuel and related equipment industries in Pittsburgh on January 28. The constitution and by-laws recommended by the pre-organization committee were adopted with but minor changes, and thirteen basic classifications of members were tentatively established.

John C. Hoffstot was elected president of the organization; W. J. Keist was elected vice president, and R. Kennedy Hanson, manager of the Pittsburgh Retail Coal Merchants Association, was named secretary-treasurer.

Among those elected to the board of directors were: Peter O'Neal, heating and piping contractor; W. A. Bowman, American Radiator Co.; F. C. Houghten, research director of the American Society of Heating and Ventilating Engineers. A general membership meeting is planned for the near future.

## CLEVELAND GROUP ENDORSES CHIMNEY CONSTRUCTION ORDINANCE

One of the most interesting and informative meetings of the Committee of Ten since organization was held recently at the Statler hotel, Cleveland, Ohio. Formal endorsement was given to the suggested ordinance for chimney construction, prepared by the National Board of Fire Underwriters, which already had met the approval of the Heating and Piping Contractors National Association, the National Warm Air Heating Association and the American Society of Heating and Ventilating Engineers.

An outline for a manual on solid fuel heating was reported by Homer R. Linn of the American Radiator Co., Chicago, chairman of the manual committee.

An interesting report on silica gel in connection with air conditioning was presented by Chairman Walker of the research committee. He told of the activities of the gas industry in utilization of silica gel and pointed out that some research in this medium with solid fuels might bring developments of considerable importance.

## CHICAGO MASTERS START CONSUMER SALES SCHOOL

A school in consumer selling methods, conducted under the auspices of the educational committee of the Plumbing Contractors Association of Chicago will start on Thursday evening, March 10. Twenty-seven contractors have signed up for the course which is scheduled for one meeting a week for eight weeks.

Ray A. Ferguson is chairman of the educational committee of the association.

The textbook for the course will be the student's manual for Consumer Selling Schools prepared by the Plumbing and Heating Industries Bureau. The material in the manual is based on the actual sales experiences of more than 200 contractors in various parts of the United States, who have made an outstanding record in merchandising plumbing and heating equipment.

The instructor for the class will be Lee A. Marrs of Chicago, an experienced teacher of salesmanship, for-

merly connected with Northwestern University and De Paul University, and a past president of the Chicago Sales Managers Association.

The Chicago association is launching the sales class both as a practical association activity and as a means of giving its members worth while instruction in business methods, according to Mr. Ferguson.

### WISCONSIN STARTS MEMBERSHIP DRIVE

Initial plans for a state-wide membership drive were formulated at a meeting of the board of directors of the Wisconsin Master Plumbers' Association on February 16 at the offices of the Milwaukee Master Plumbers' Association.

Tentative plans provide for the division of the state into zones, with various members of the organization in the individual zones contacting non-members. It is planned to waive the initiation fees of the association for the remainder of the present year, as a special inducement to join now.

Intensive work on the membership drive will be started immediately.

# Plan for Big New York Convention and Exposition

M. J. Kennedy

WITH the major share of booths for the 1932 Exposition already reserved, action on other details of the 1932 Exposition of the National Association of Master Plumbers got under way at a recent meeting of members of both the National Convention and Exhibit Committee and the Sales Promotion Committee which was held in New York City.

M. J. Kennedy is chairman of the first mentioned committee, and C. W. Wanger, president of the Woodward-Wanger Co., Philadelphia, is chairman of the Sales Promotion Committee.

In calling members of the Sales Promotion Committee for the meeting, Mr. Wanger announced the membership of this committee for 1932. The committee, appointed by P. W. Donoghue, president of the National association, is as follows: C. W. Wanger, chairman; Joseph G. Hildebrand, secretary-manager, Plumbing and Heating Industries Bureau, Chicago, Ill., vice chairman; David S. Sanderson, chairman of the Educational Committee of the National Association of Master Plumbers, Philadelphia, Pa.; Franklin E. Darling, president of the Massachusetts State Association of Master Plumbers, Fall River, Mass.; Russell G. Creviston, sales promotional manager, Crane Co., Chicago, Ill.; Walter J. Kohler, Jr., Kohler Co., Kohler, Wis.; Ed. L. Penfrase, sales manager, Josam Mfg. Co., Cleveland, Ohio; W. L. Schaeffer, advertising manager, National Tube Co., Pittsburgh, Pa.; H. F. Beglen, vice president, Standard Sanitary Mfg. Co., Pittsburgh, Pa.

Greater New York City plumbing and heating wholesalers recently joined the Convention and Exhibit Committee in backing the Convention when the first of a series of borough committees of the Jobbers' Credit Association was appointed. The following members of the Jobbers' Credit Association will serve on the Manhattan and Bronx allied committee:

P. R. Mork, Crane Co.; Arthur Johnson, J. D. Johnson Co.; E. Schwartz, Schwartz Supply Co.; E. S. Keating, Keating Supply Co.; Leo O'Neil, O'Neil Supply Co.; Milton Goldsmith, Sam S. Glauber Co.

Appointment of this committee for Manhattan and the Bronx will be followed by appointment of similar co-operating allied committees for Brooklyn, Westchester County and the neighboring New Jersey area.

At the meeting of the National Convention and Exhibit Committee Mr. Kennedy reported 74 per cent of all booth space by value sold. The total of space reserved by January 29, he stated, exceeded by a narrow margin the entire amount reserved for the 1931 convention. More square footage of space had been taken by January 29 than had been taken by June 1 for the 1931 meeting, he added.

Firms reserving space during the first 15 days of the sale are listed below:

American Brass Co., Waterbury, Conn.
American Gas Association, New York, N. Y.
Armstrong Mfg. Co., Bridgeport, Conn.
Badger Meter Mfg. Co., Milwaukee, Wis.
Bareham & Saunders, Rochester, N. Y.
Bethlehem Steel Corp., Bethlehem, Pa.
Blake Specialty Co., Rock Island, Ill.
Blue Seal Chemical Co., Roselle, N. J.
Bridgeport Brass Co., Bridgeport, Conn.
Borden Co., Warren, Ohio.
W. A. Case & Son Mfg. Co., Buffalo, N. Y.
Central Foundry Co., New York, N. Y.
Chase Brass & Copper Co., Waterbury, Conn.
Chicago Pump Co., Chicago, Ill.
C. F. Church Mfg. Co., Holyoke, Mass.
Conover Co., Chicago, Ill.
Coyne & Delany Co., Brooklyn, N. Y.
Crane Co., Chicago, Ill.
A. F. Curtin Valve Co., Medford, Mass.
Decatur Pump Co., Decatur, Ill.
Domestic Engineering, Chicago, Ill.
Duriron Co., Inc., Dayton, Ohio.
Excelso Products Corp., Buffalo, N. Y.
Flat Metal Mfg. Co., Chicago, Ill.
Hedges & Bro., Newark, N. J.
Hoegger, Inc., Jersey City, N. J.
Johns-Manville Corp., New York, N. Y.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Josam Mfg. Co., Michigan City, Ind.
John G. Kelley, Inc., New York, N. Y.
John Kinnear, Arlington, N. J.
Kohler Co., Kohler, Wis.
C. H. Leibfried Mfg. Corp., Brooklyn, N. Y.
Mueller Brass Co., Port Huron, Mich.
Mueller Co., Decatur, Ill.
National Tube Co., Pittsburgh, Pa.
Norristown Magnesia & Asbestos Co., Norristown, Pa.
Nye Tool & Machine Works, Chicago, Ill.

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L. R. TEEPLE CO.
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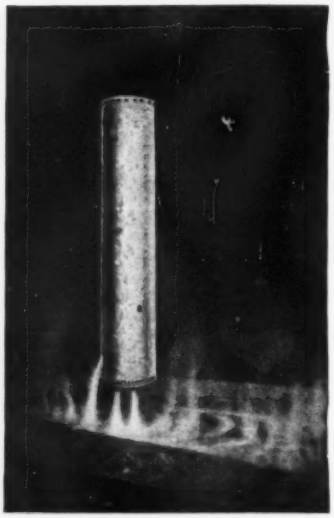

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to U. S. Standard Specifications and then dip them some more to exceed those specifications by at least 50%. No wonder these boilers stand up under the most unfavorable conditions giving less trouble from rust, scale and corrosion.

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RANGE BOILERS
*JOBBERS:* Write us for sample of any boiler for 30 day inspection.
Pennsylvania Range Boiler Company
24th & Washington Avenue *Est. 1895* Philadelphia

Hotstream Heater Co., Cleveland, Ohio.
International Nickel Co., New York, N. Y.
Jenkins Bros., New York, N. Y.
Patterson-Kelley Co., New York, N. Y.
Plumbing & Heating Contractors Trade Journal, New York, N. Y.
Revere Copper & Brass, Inc., New York, N. Y.
Ridge Tool Co., Elyria, Ohio.
Ruud Mfg. Co., Pittsburgh, Pa.
J. A. Sexauer Mfg. Co., New York, N. Y.
Sloan Valve Co., Chicago, Ill.
Somerville Iron Works, Somerville, N. J.
Standard Sanitary Mfg. Co., Pittsburgh, Pa.
Toledo Pipe Threading Machine Co., Toledo, Ohio.
Trenton Potteries Co., Trenton, N. J.
Vinco Co., Inc., New York, N. Y.
Weil-McLain Co., Michigan City, Ind.
Wolverine Brass Works, Grand Rapids, Mich.
Woodward-Wanger Co., Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, Ohio.
"X" Laboratories, New York, N. Y.

## COLLECTIONS IMPROVE IN DENVER

Clyde A. Newman, secretary of the Denver Master Plumbers Association, states that collections in January 1932 were better than in the corresponding month of 1931 and 1930.

During 1931 the collection department of the association collected more than one thousand dollars in bad accounts for members of the association. In this same period, through the use of legal services, approximately eight-hundred dollars more was collected. In 1930 the ratio was considerably different as in that year the association collected double the amount of the legal agency.

## SPEAKS ON NEW DEVELOPMENTS IN AIR CONDITIONING AND HEATING

The Macoupin and Montgomery County (Ill.) Master Plumbers Association held an interesting meeting recently at the Mercantile Hotel, in Mt. Olive, Ill. The feature of the meeting was an address by C. A. Pickett, St. Louis district representative of the Herman Nelson Corp., Moline, Ill. Mr. Pickett spoke on the latest developments in heating, ventilating and air conditioning.

The association was organized in 1927 and is headed by the following officers: J. T. Smith of Gillespie, president; O. M. Denton of Hillsboro, vice president; C. Lang of Mt. Olive, secretary; C. J. Schloman of Mt. Olive, treasurer. The directors are H. McPherson and H. E. Hopper.

## ST. LOUIS BOWLERS APPROACH CRUCIAL GAMES

The bowling league of the Master Plumbers Association of St. Louis, Mo., is approaching the "crucial" games. The standing of the various teams on February 17 was as follows:

| *Team No.* | *Captain* | *Won* | *Lost* |
|---|---|---|---|
| 2 | F. J. Timmerman | 34 | 17 |
| 3 | Frank Nagel | 27 | 24 |
| 4 | William Thole | 23 | 28 |
| 1 | Charles Burgess | 18 | 33 |

The high team score for one game is held by Team No. 4 with 865 points, and for three games by team No. 2 with 2370 points. High individual score of 254 for one game is held jointly by F. Nagel and C. Dierkes. Fred Timmerman holds high individual score for three games, with 617. High individual averages are Frank Nagel, 177; Fred Timmerman, 171, and Charles Burgess, 170.

*Max F. Burger**

# New Bill Aims to Stop Bid Shopping by General Contractor

THE outstanding legislation now before Congress affecting the building industry H. R. Bill No. 4680, introduced by Congressman E. W. Goss, of Connecticut.

Plumbing contractors and material men, as well as most other branches of the building industry, should welcome the attempt of Congressman Goss to stop the unfair and uneconomic practice employed by a number of general contractors to shop bids after the government contract is procured by them.

By virtue of this practice, government work has become unprofitable to most contractors, material men and supply men in the building industry. This practice has been an outstanding factor and contributed largely to the existing business depression.

Self-preservation should induce everyone engaged in the building industry, either as installer, erector or supplier of building materials, to support Congressman Goss in the fight he is making in behalf of the building industry.

If this bill is enacted into law all contracts in excess of $5,000 for the construction, alteration or repair of any public building in the United States or in the District of Columbia, etc., shall be awarded only to bidders whose bids are accompanied by a statement containing the names and addresses of the sub-contractors, material men and supply men whose services the bidder intends to utilize in the performance of the work. The general contractor, under this bill, will be subjected to liquidated damages for failure to utilize such sub-contractors, material men and supply men in the performance of the work.

The only exception allowable under this bill is when it is shown to the satisfaction of the supervising architect of the treasury that substitution for a sub-contractor, material man or supply man, as the case may be, was justified by reason of the inability or unwillingness of such sub-contractor, material man or supply man to furnish the materials or supplies or properly perform the work.

The purpose of this bill is to prevent the general contractor who has made a bid below his proper cost based on the bids received from sub-contractors, etc., to reimburse his loss at the expense of sub-contractors, material men or supply men by reopening the bids.

This bill was referred to the Committee on Expenditures in the Executive Departments.

Copies of this bill may be obtained by writing to the congressman of your district. This bill, in its present form, reads as follows:

A BILL

To require contractors on public-building projects to name their subcontractors, material men and supply men, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That contracts in excess of $5,000 in amount for the construction, alteration, or repair of any public building of the United States or of the District of Columbia within the geographical limits of the States of the Union or the District of Columbia, shall be awarded only to bidders whose bids are accompanied by a statement containing the names and addresses of the subcontractors, material men, and supply men whose services the bidder intends to utilize in the performance of the work. Such contracts shall also contain provisions for payment by the contractor of liquidated damages for failure to utilize such subcontractors, material men, and supply men in the performance of the work. Sums assessed or paid as liquidated damages for such failure may be remitted or refunded by the Supervising Architect of the Treasury, but only in case it is shown to his satisfaction that substitution for a subcontractor, material man or supply man, as the case may be, was justified by reason of the inability or unwillingness of such subcontractor, material man or supply man—to furnish the materials or supplies, or properly to perform the work, as the case may be.

SEC. 2. No claim for the remission or refund of liquidated damages shall be granted under this Act unless application therefor is filed within one year after the liability of the contractor accrues. If any such application for refund of any sum paid as liquidated damages is denied, or if no application for such refund is filed within the period provided for filing application under this section, such sum shall be covered into the Treasury as miscellaneous receipts.

SEC. 3. This Act shall take effect thirty days after its passage but shall not affect any contract

* Mr. Burger is manager of the Legal and Legislative Department of the Central Supply Association, Chicago.

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No other water heater on the market is made of finer materials. . . . No other heater offers more features of interest to the buyer, or more profit making possibilities for the plumber. Why don't you investigate? Write for the details of our attractive dealer proposition. . . . Today.
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CAPACITIES 15 to 1000 gallons
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then existing or any contract that may thereafter be entered into pursuant to invitations for bids that are outstanding at the time of the passage of this Act.

## URGES SUPPORT OF "SPEND FOR THE HOME" CAMPAIGN

At a recent zone meeting of master plumbers from the northwestern section of Arkansas, held in Ft. Smith, State President C. R. Jones of Siloam Springs explained in detail the DOMESTIC ENGINEERING "Spend for the Home in 1932" campaign. Mr. Jones told how this campaign has been taken up by plumbing and heating contractors and others associated with the building industry in many sections of the country. He said the campaign should be a big help to the industry and strongly urged the Arkansas master plumbers to get behind the movement.

Considerable discussion was devoted to making plans for the Arkansas state convention, which will be held in Little Rock on April 11 and 12. The business meeting was followed by a banquet in the evening. President Jones was assisted by George Shirley of Van Buren in conducting the meeting. Visitors at the meeting included H. O. Green of Tulsa, Okla., treasurer of the National Association of Master Plumbers, N. G. Watt, also of Tulsa, president of the Oklahoma Master Plumbers Association, and T. B. Jones of Wewoka, Okla.

## PHILADELPHIA MASTERS DISCUSS MERCHANDISING METHODS

Many subjects of importance to the trade were discussed at the February meeting of the Philadelphia Master Plumbers Association, such as workmen's compensation, the activities of the state association and merchandising methods. The board of directors also met and elected William Boal, chairman, and Elvin MacKay, secretary.

David S. Sanderson of Drexel Hill explained the "Spend for the Home in 1932" campaign sponsored by DOMESTIC ENGINEERING, and a discussion followed as to how this movement could best be handled in Philadelphia.

A letter was read from the National office requesting the local members to support a bill that is now before congress, designed to prevent the shopping of bids by the general contractor on government work. President Maney J. Feeney announced the re-appointment of Walter Raid as chairman of the membership committee. George M. Hicks reported on the recent semi-annual convention of the state association.

D. A. Kime of the Standard Wall Covering Co., Philadelphia, was one of the principal speakers on the educational hour. He told of the special motor truck which his company has constructed for displaying plumbing materials. On one side of the truck is a bathroom, while on the other side there is a complete kitchen. It is equipped with radio broadcasting equipment so as to attract attention.

Harry L. Stilwell, who is chairman of the educational committee, also introduced Mr. LaTour of the Stationary Laundry Machine Co., Philadelphia, who described a clothes washing device of his company's manufacture.

# WEST VIRGINIA MASTERS TAKE STEPS TO SECURE STATE PLUMBING CODE

"A STATE plumbing code for West Virginia" was the keynote of the ninth annual convention of the Master Plumbers Association of West Virginia, held February 15-16 at Martinsburg.

The need for a state code was first emphasized at the opening session by Chief Plumbing Inspector A. R. McGonegal, of Washington, D. C., and it came up repeatedly through the convention, to be adopted during the closing hours as the principal effort of the association for the coming year. The state has no code now. Intensive efforts to secure one, made several years ago by the association, were defeated. The plumbers plan to renew the effort to secure legislation, working through individual members, locals and the state organization, and to secure such help in this as they can from the National association.

W. M. Johnson, of Huntington, was elected president for the coming year, with Luther H. Caskey, Martinsburg, elected vice president. C. V. Swann, Huntington, was elected secretary, succeeding J. Guy Hawkins, Fairmont. Huntington was chosen as the convention city for 1933. The convention committee, headed by L. H. Caskey, did a splendid job in the preparations.

Retiring President Charles E. Mumford, of Fairmont, at the opening session appointed Paul Hammann, Martinsburg, sergeant-at-arms, and announced the following committees: Credentials, George Appleby, Martinsburg, W. M. Johnson, Huntington, and A. P. Fleming, Fairmont; resolutions committee, C. V. Swann, Huntington, E. E. Heck, Martinsburg, and George W. Bedeker, Wheeling; auditing committee, C. A. McMunn of Clarksburg, and Harry Hammann, Jr., and J. G. Baldwin, of Martinsburg.

Three other talks were outstanding on the two-day program—those of Robert J. Barrett, of Washington, D. C., a director of the National Association of Master Plumbers, who read the same address that National President P. W. Donoghue made some weeks ago before the Central Supply Association in Chicago. Before, during and after the reading of the address, Mr. Barrett interjected some emphatic comments of his own on unfair trade practices.

Mr. Barrett asked the locals and individuals to support actively, and make their support known to Congressman Goss of New Jersey, the bill now in Congress, House Bill No. 4680, calling for the naming of sub-contractors by general contractors on Federal jobs, before the contract is let. This is designed to stop the "shopping" of bids, he said.

Mr. Barrett asked plumbers in cities where a co-operative plan has not been reached between themselves and the utilities dealing in appliances to let the National association or himself know, and stated

**W. M. Johnson, Huntington, new state president, and C. V. Swann, also of Huntington, elected state secretary**

that every effort would be made to bring about a situation satisfactory to all.

W. A. Tobias, Hagerstown, Md., local chief of Central Public Service Corp., in a paper on "The Relationship Between Plumbers and Public Utilities," outlined the matter of appliance sales from the gas companies' standpoint.

Mr. Tobias contended that the gas companies had been thrown into appliance-selling to increase gas consumption as a fuel; that superior appliances must be installed and superior service must be maintained on appliances or the customer turns his wrath, not to the appliance but to the fuel, and straightway becomes a prospect for a competing fuel.

"Pioneering has been slow, expensive, but had to

**Group of delegates and guests attending the annual convention of the Master Plumbers Association of West Virginia, held recently at Martinsburg**

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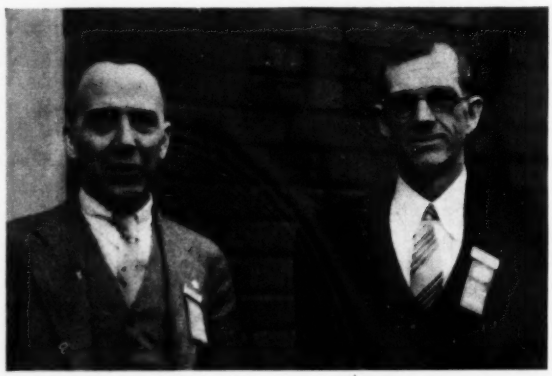
be done, to educate a public which prefers the older things," he said. "Much profitless promotional effort has been necessary. Many thousands of appliances have been lost, destroyed or simply given away to the customers. But the increase in the use of gas has fully justified the pioneering promotion work," he stated.

Neither the dealer nor the utility has the right to the whole field, said Mr. Tobias. At present, about half the ranges are being sold by utilities, and the other half by dealers. They have in many territories, his own included, worked out arrangements entirely satisfactory to both groups, he added.



**Charles E. Mumford, Fairmont, retiring state president, and J. Guy Hawkins, also of Fairmont, retiring secretary**

George W. Redeker, of Wheeling, arose to reply. He charged that the gas company entered the appliance-selling field in Wheeling not to increase sales, since everybody there used gas anyhow; but that the gas company brought into the selling practices that were ruinous to the Wheeling dealers. Gas companies should understand that the antagonism of dealers is based on such tactics, and that until they are done away with the antagonism will continue, stated Mr. Redeker emphatically.

Joseph G. Hildebrand, of Chicago, secretary-manager of Plumbing and Heating Industries Bureau, read parts from the survey recently conducted in Cincinnati, using the portion on "The Consumer's Re-action to the Plumbing Trade." This report was published in a recent issue of DOMESTIC ENGINEERING.

B. Y. Kinsey, manager, Heating and Piping Contractors Cleveland Association, spoke on "selling." Contracting plumbers are doing a better job of adjusting themselves to present conditions than either manufacturers or wholesalers, he said. He finds that in every city some contracting plumbers that are making money, and that there are more real salesmen among the contracting plumbers than among the other two branches.

He pointed out that "in Cleveland, salesmen for modernization heating systems averaged one sale in twenty-two calls. A Cleveland firm on a business of $52,000 last year, a fraction of its former business, made more money than it ever cleared before. The two partners made their prospect calls mostly at night, when husband and wife were home. Of the $52,000 business done, $32,000 was modernization."

# Convention Dates

**March 14 and 15, 1932**—KANSAS—The annual convention of the Kansas Master Plumbers Association, to be held at the McPherson, with headquarters at the Hawley Hotel.

**March 14, 15 and 16, 1932**—INDIANA—The annual convention of the Indiana Association of Master Plumbers, to be held at Muncie, with headquarters at the Hotel Roberts.

**March 15 and 16, 1932**—NORTH DAKOTA—The twelfth annual convention of the North Dakota Association of Master Plumbers, to be held at Fargo.

**March 15 and 16, 1932**—MAINE—The annual convention of the Maine State Master Plumbers Association, to be held at Portland, with headquarters at the Falmouth Hotel.

**April 5, 1932**—MASSACHUSETTS—The annual convention of the Massachusetts State Association of Master Plumbers, to be held in Boston, with headquarters at the Hotel Statler.

**April 5 and 6, 1932**—NEW YORK—The annual convention of the New York State Association of Master Plumbers, to be held in New York City, with headquarters at the Hotel Pennsylvania.

**April 5, 6 and 7, 1932**—MICHIGAN—The annual convention of the Michigan State Association of Plumbing and Heating Dealers, to be held at Mt. Clemens, with headquarters at the Medea Hotel.

**April 6 and 7, 1932**—C. S. A.—The 108th regular meeting of the Central Supply Association, to be held at the Palmer House, Chicago. Executive Committee will meet April 5.

**April 11 and 12, 1932**—ARKANSAS—The annual convention of the Arkansas State Association of Master Plumbers, to be held at Little Rock, with headquarters at the Lafayette Hotel.

**April 11-16, 1932**—A. O. B. A.—The ninth annual convention and show of the American Oil Burner Association, to be held in Mechanics' building, Boston, Mass. Convention headquarters at the Statler hotel.

**April 18 and 19, 1932**—MISSOURI—The annual convention of the Missouri State Association of Master Plumbers, to be held in Kansas City.

**April 18 and 19, 1932**—TEXAS—The annual convention of the Associated Master Plumbers of Texas, to be held in San Antonio, with headquarters at the Blue Bonnet Hotel.

**April 22 and 23, 1932**—LOUISIANA-MISSISSIPPI—The annual convention of the Louisiana-Mississippi Association of Plumbing and Heating Dealers, to be held at Mandeville, La., with headquarters at the St. Tammany Hotel.

**April 25 and 26, 1932**—OKLAHOMA—The annual convention of the Oklahoma Master Plumbers Association, to be held at Enid, with headquarters at the Youngblood Hotel.

**April 26, 1932**—COLORADO—The annual convention of the Colorado Society of Sanitary and Heating Engineers, to be held at Denver, with headquarters at the Albany Hotel.

**May 9, 10 and 11, 1932**—N. P. S. A.—The annual convention of the National Pipe and Supplies Association, to be held at Pittsburgh, Pa., with headquarters at the William Penn Hotel.

**May 16, 17 and 18, 1932**—PENNSYLVANIA—The annual convention of the Pennsylvania State Association of Master Plumbers, to be held in Wilkes-Barre, with headquarters at the Mallow-Sterling Hotel.

**May 16, 17 and 18, 1932**—H. & P. C. N. A.—The 43rd annual convention of the Heating and Piping Contractors National Association, to be held at Detroit, Mich., with headquarters at the Book-Cadillac Hotel.

**May 23, 24 and 25, 1932**—CALIFORNIA—The 31st annual convention of the State Association of Master Plumbers of California, to be held at Oakland, Calif.

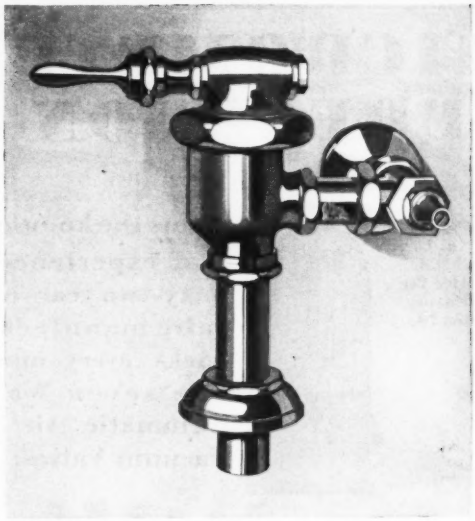
**June 2 and 3, 1932**—VIRGINIA—The annual convention of the Virginia Associated Plumbing and Heating Contractors, to be held at Alexandria, with headquarters at the George Mason Hotel.

**June 21, 22 and 23, 1932**—N. A. M. P.—The 50th annual convention of the National Association of Master Plumbers, to be held in New York City, with headquarters at the Hotel Pennsylvania.

## COMING TRADE EVENTS

**March 12, 1932**—The fourth conference of the Northern California Federation of Plumbing and Heating Industries, to be held at Sonoma Mission Inn, Boyes Springs, Calif.

**March 17, 18 and 19, 1932**—The third industrial conference

*Crane* Alpha *water controlled flushing valve, C13022-A*

# The *Alpha* pledges even longer life, more carefree service

You can count today, if you are wise, the start of a new and more profitable period in closet installation . . . a period more trouble-free, richer in good-will. The Crane *Alpha* water controlled flushing valve brings improved features which tell in cleaner closets, fewer mechanical interruptions, more economical installation and operation.

It has:

The sturdiest cup-leather construction.

A nickle silver screen to eliminate by-pass stoppage.

A water-way large enough to insure satisfactory flushes on low pressures.

A refill-lip long enough to insure resealing trapways on all bowls.

Its handle is adjustable to three positions and it requires only one stock for top, back, or side inlet bowls.

Examine this valve at your Crane branch; better yet, carry it in stock. It's one of the easiest flush valves to sell; for to its sales commanding features you can add the Crane Budget Plan under which you get all your money as soon as a modernizing installation is completed with it, while your customer has 24 months in which to pay.

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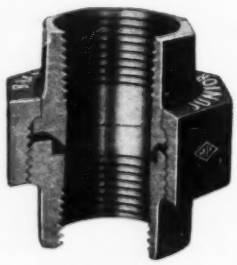

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at Case School of Applied Science, Cleveland, Ohio. Air conditioning will be the topic.

**March 22, 23 and 24**—The first annual "Forced Warm Air Short Course," to be held at Michigan State College of Agriculture and Applied Science, East Lansing, Mich.

**March 28, 1932**—The anual dinner-dance of the Association of Master Plumbers of the State of Maryland, to be held at the Lord Baltimore Hotel, in Baltimore, Md.

**June 20, 21, 22 and 23, 1932**—Exposition of plumbing, heating and allied products, in connection with the 50th annua' convention of the National Association of Master Plumbers in Madison Square Garden, New York City.

## Many Local Associations Elect New Officers

### WICHITA, KAS.

The Master Plumbers Association of Wichita has elected H. P. Dunaway as its president for the ensuing year. The other officers are: G. T. Long, vice president and O. C. Robertson, secretary-treasurer.

### LOUISVILLE, KY.

The Master Plumbers' Association of Louisville recently elected Carl C. Spies president for the ensuing year. The other officers are A. D. Burger, vice president; and O. H. Mitzlaff, secretary-treasurer.

### MEMPHIS, TENN.

The Memphis Association of Master Plumbers has elected as its president for the ensuing year, B. L. Tutt. T. J. Craven is vice president; J. L. Peebles, secretary; and Gustav Limberg, treasurer.

### DAYTON, OHIO

The Dayton Master Plumbers Association recently held its annual meeting and elected the following officers for the ensuing year: Charles R. Park, president; George Buck, vice president; and Charles L. Ganger, secretary-treasurer.

### JERSEY CITY, N. J.

The Master Plumbers Association of Jersey City has elected the following officers: George Cooper, president; James J. Conlin, vice president; James T. Brennan, secretary; and Louis S. Komoski, treasurer. The trustees are: John J. Corcoran, Herman Firstenberg and Robert T. MacDonald.

### QUEENS BOROUGH, N. Y.

Joseph Zimmerman has been re-elected president of the Master Plumbers' Association of Queens Borough, N. Y. The other officers, all of whom were re-elected, are: Joseph S. McNamara, first vice president; Joseph R. Mittasch, second vice president; Lawrence J. Redmond, recording secretary; John F. Rogers, treasurer and financial secretary; Charles R. Budrie, marshal; and Harry Hauck, sergeant-at-arms.

### BROOKLYN, N. Y.

The Master Plumbers' Association of Brooklyn, N. Y., has elected the following officers for the ensuing year: J. Louis Bosch, president; Ray V. O'Brien, vice president; Thomas H. Pinnell, recording secretary; Henry D. Jost, financial secretary; John J. Dixon, treasurer; P. F. Halloran, marshal; Abraham Cohen, sergeant-at-arms.

# ANSWERED

A few of the Questions of most general interest asked by readers and answered by our engineers

In this issue


**1—A Vapor Heating Problem**

**2—Expansion in a Steam Line of Steel Pipe**


## —1—

*To the Editor:*

Enclosed herewith is a sketch—Fig. 1—of a contemplated installation of vapor heat to a building 150 ft. from the boiler room which supplies the main building; the boiler is located on the ground level and, in order to get over to the other building, it will be necessary to run underground the entire distance. This main is to supply about 500 sq. ft. of radiation and, according to our figures, should be 2½ in. in size. At the end of the main a float drip trap would be placed, this trap being of 15 lb. pressure. There also will be installed an air relief valve of the bellows type and the condensation would be taken care of by a condensation pump of small capacity which would return the water from this building to the main condensation pump. The heating system to the main building is supplied from a steel firebox boiler with a full automatic oil burner and is controlled by an electric thermostat, stack switch and pressurestat.

Will you please check this over and advise if correct or if you can suggest any improvements on same? Also how could I be assured of heating the building with 500 sq. ft. of surface if the thermostat in the main building cuts off the oil burner? Is there a possibility that the other building never will be thoroughly heated with this method of control in the main building?

Florida. T. P. B.

As will be seen by referring to Fig. 1, our correspondent is faced with the problem of getting an underground steam line over to a building 150 ft. distant and of heating that building from the same boiler as supplies the main building. We will assume, from the fact that condensation pumps are being used to return the condensation, that there never is any negative pressure in the steam main; that the system operates at a few ounces above the atmospheric pressure and so is termed a vapor system. Inasmuch as the returns either go to a condensation pump already, or will go to a similar pump when the other building is added, there is no reason why the steam line to the building 150 ft. away should not be dropped underground and run over to this building provided it is properly pitched and drained. That is to say, the fact of this line being below the water line of the boiler is immaterial owing to the condensation going to pumps and not being returned to the boiler by gravity. It is also assumed that our correspondent intends to cover this line properly and to install it in a trench of some sort to protect it from

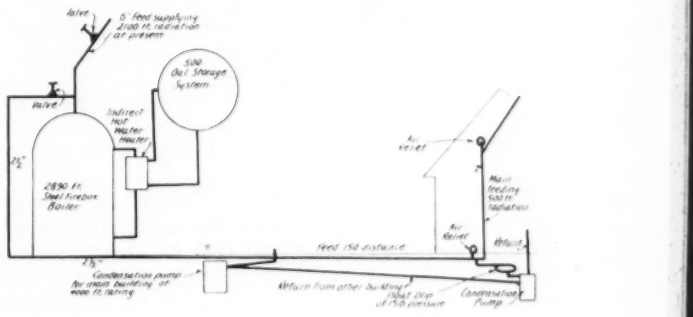



Fig. 1

the weather and mechanical injury as well as to provide for expansion.

The draining of this line when it is kept under constant steam pressure is not a serious matter as is shown by the following:

Outside surface on 2½-in. pipe....0.753 sq. ft. per ft.
Outside surface on 150 ft. of pipe
0.753 × 150 .....112.95 say 113 sq. ft.
Radiation from pipe per sq. ft. per degree temp. diff. .....2.6 Btu.
Minimum Outside Temperature about..Zero deg. F
Temperature of Steam in Line about....215 deg. F
Temperature difference .....215 deg. F
Probable efficiency of covering.....60%

The line loss per hour may now be approximated by multiplying the co-efficient per sq. ft. per degree difference (2.6 Btu.) by the number of degrees for the

maximum temperature difference (215 F) which will give the Btu. per hr., which will be lost for 1 sq. ft. of bare pipe; multiplying this by the number of sq. ft. of pipe surface (113 sq. ft.) will give the total Btu. lost by the line every hour for bare pipe and multiplying this amount by the difference between 100 per cent and the efficiency of the covering will give the approximate actual loss from the line. Thus:

$$\frac{2.6 \times 215 \times 113 \times (100\% - 60\%)}{240} \text{ or } 105 \text{ sq. ft. (approx.)}$$

That is to say, the condensation formed in this 150 ft. of 2½-in. pipe per hr., will approximately equal that formed in 105 sq. ft. of ordinary radiation and the E. D. R. for this line is 105 sq. ft. It will be seen that—as far as this condition is concerned—any drip trap that will handle 125 sq. ft. of radiation will be sufficient.

But there is another condition to be considered and that is the amount of condensation produced when steam

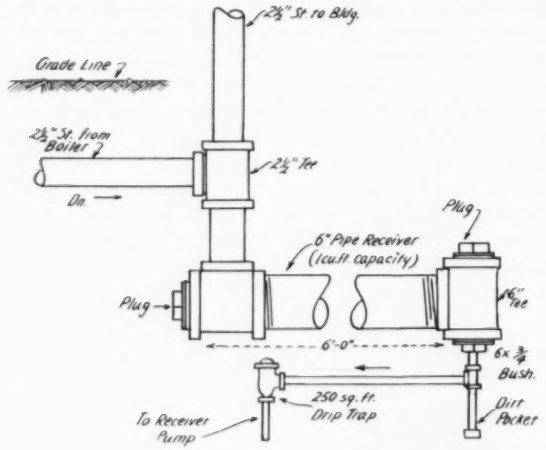



Fig. 2

is turned into this cold line and has to heat up the pipe as fast as it passes along the line. This is calculated by taking the specific heat of the metal and the weight of the metal from which the number of Btu. required to warm the pipe up to the steam temperature can be ascertained. This is done as follows:

First the weight of the pipe is found by referring to pipe tables for standard weight pipe where it is shown that 2½-in. pipe weighs 5.85 lb. per lineal foot; so the total weight of the line 150 ft. long is

5.85 lb. × 150 or 877.50 lb.

and it will be assumed that, in the worst condition, the pipe goes down to zero when the steam is cut off and has to be heated up to 215 deg. Fahr. when the steam comes on again so that the temperature rise will be

215 deg. Fahr. — 0 deg. Fahr. or 215 deg. Fahr.

Now we know that to raise a pound of water 1 deg. Fahr. requires one Btu. and, if the specific heat of steel is 0.1165 or—say—12 per cent of water, the Btu. required to raise a pound of steel pipe 1 deg. Fahr. will be approximately 0.12 and, if the line is warmed up during a period of one hour the Btu. per hr. required will be

877.50 lb. × 215 F × 0.12 or 22,639.5 Btu.

which, reduced to E.D.R. will equal

22,639.5/240 or 94.33 sq. ft. E.D.R.

The difficulty arises in the fact that one hour could not be allowed as the time to heat up this line; the time is much more likely to be in the neighborhood of 5 minutes which would make the condensation developed during the five minutes that the line was warming up equal to

94.33/4 or 23.58 lb., say 24 lb.

as ¼ lb. of condensation is considered as equivalent to 1 sq. ft of E.D.R., and the rating on a trap to carry off

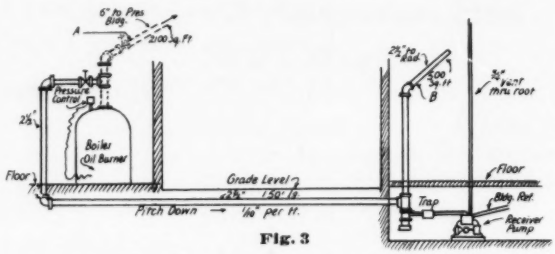



Fig. 3

this amount of condensation in five minutes would have to be 12 times as much or about 288 lb. (1152 sq. ft.) as the trap is rated on an hourly and not on a 5 minute basis. This seems to indicate that the load on the trap will be about 10 times as much, if the line is heated up in 5 minutes, as it will be after the line is hot and only the radiation loss has to be considered. This makes it appear that our correspondent's idea of a float trap at the building end of the steam main was a very good one and the only other solution would be to provide a small condensation pocket there of about 1 cu. ft. capacity in which the condensation could collect as the line warmed up and to drain this pocket through an ordinary thermostatic drip trap of about 250 sq. ft. rating. This is illustrated in Fig. 2 and is offered as a suggestion.

We are of the opinion that no air vents are required on the steam main but that an automatic air valve should be placed on the top of the float trap, if such be used, to prevent the trap becoming air bound. All of the air in the piping should find its way out through the regular vapor vent. There is no difficulty in taking the condensation into the new receiver pump if the receiving chamber of this pump also is vented. The matter of being 'unable to get steam over to the building when

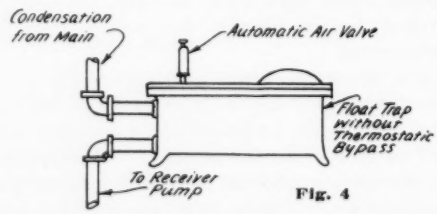



Fig. 4

the thermostat in the main building is closing off the oil burner is a real difficulty, and the seriousness of this depends on several things; for example, if the 500 sq. ft. of radiation in the other building is somewhat higher in proportion to the heat loss than the 2,100 sq. ft. is in the main building, it would be necessary to have heat on the 500 sq. ft. for a shorter time than in the main building and no difficulty might develop. Also, if the length of run in the main building exceeds that in the other building including the 150 ft. 2½-in. underground pipe, again no trouble may develop. But, if either of

these conditions is not met, then it is quite possible that the thermostat in the main building might be able to hold 70 deg. Fahr. in the main building without ever having the oil burner in operation long enough to have the steam penetrate to the end of the supply main in the other building after its 150 ft. of travel underground. This difficulty apparently will be aggravated by the use of a 2½-in. line as the 6-in. line running to the main building has a proportionately greater area for its load than the 2½-in. line running to the 500 sq. ft. The area of a 6-in. pipe is 28.89 sq. in., and the area of a 2½-in. pipe is only 4.778 sq. in., or about 1/6th as much. Allowing for the greater friction in the 2½-in. load on it should be only 1/7th or ⅛th as much as on the 6-in. line. Actually the load is 500/2,100 or nearly ¼ which is twice what it should be for proportional distribution. A 3-in. line would be the proper size to use.

In order to overcome all of these difficulties and still to use a 2½-in. line we suggest the arrangement shown in Fig. 3 where it is proposed to operate the boiler from the pressure control only and to use two motorized valves, one located in the steam line going to the main building at "A" and the other in the 2½-in. line at "B"; the thermostat in the main building would control valve "A" and a new thermostat in the other building would control valve "B." Steam at very low pressure would be carried on the boiler at all times and the control of the radiation in each building would be entirely independent of the other; this also would have advantages in always keeping the water tank heated regardless of the outside weather conditions. The receiver and thermostatic trap shown in Fig. 2 could be used with this arrangement or the float trap suggested by our correspondent with an automatic air valve as shown in Fig. 4 might be substituted.

## Questions Answered and Discussed by Readers

### How the Question Was Answered

The following question was asked in the issue of February 6, and the accompanying answer is by a reader:

*How much expansion should be expected from a steam line made up with steel pipe and 100 ft. long when carrying steam at 5 lb. gauge pressure if the line is erected in freezing weather? How much would the expansion increase if 100 lb. steam is used?*

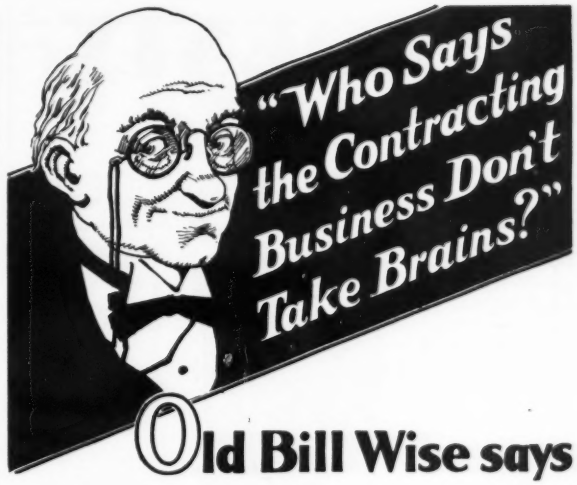
### How Would You Answer This Question?

*What size of water pipe would you use to supply 10 water closets equipped with 1¼-in. flush valves if the normal water pressure in the line is 40 lb.?*

Answers based upon your experience, and suitable, will be paid for and published in the April 2 issue.

—1—

PIPE will expand in accordance with the temperature rise which occurs between its initial temperature when erected and the steam temperature when put into service; a pipe erected in cold weather


"I may not know so much about merchandising but I have some experience in the contracting business. The contractor that is successful must know how to coordinate and organize his men and his materials.

"That is the real part of the contracting business. It's a rare combination of both science and art which requires a heap more than the intelligence of a mechanic. Into it are poured the highest type and finest kind of brain work.

"Whenever a plumbing and heating contractor acquires the necessary skill to do that job well, he begins to outstrip all competition and to make money in the business.

"I've got good reason to believe that the number of skilful contractors is increasing all the time, too; because they are the only kind who keep buying more and more Ohio Brass valves. They know that these valves pay "a profit in the make-up" compared to the "buy 'em cheap, sell 'em dear and skin the public" variety of valves.

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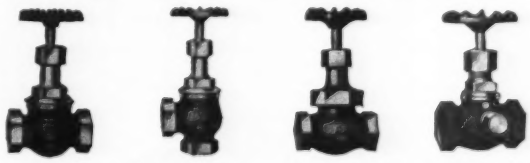

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No. 15 Line; globe, angle and check composition disc valves; 125-lb. w. s. pressure.

No. 11 Union Bonnet Line; globe and angle composition disc valves; 150-lb. w. s. pressure.

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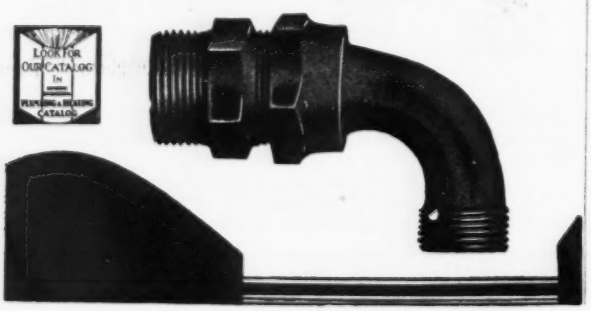

will expand slightly more than a pipe erected in hot weather provided both pipes ultimately carry the same pressure of saturated steam. In the case cited here the pipe was installed in "freezing" weather, or somewhere around 32 deg. Fahr., and when in operation will be carrying steam at 5 lb., gage pressure which means about 228 deg. Fahr. Consequently the temperature rise in the pipe is

228 F — 32 F or 196 F.

The pipe is a steel pipe and looking up the coefficient of expansion for steel it is found that it is 0.0000063 which means that the metal expands this proportion of its length for every degree of rise. With 196 deg. Fahr. temperature rise the expansion of the pipe will be

0.0000063 × 196 F or 0.0012348

and since the line is 100 ft. long, the amount of increase in this length is

0.0012348 × 100 or 0.12348 ft.,

and this changed to inches is

0.12348 × 12 or 1.48176 in.,

which is very close to 1½ in.

Steam pipe is not liable to expand this full amount, however, unless it is covered as the expansion, when not covered, is influenced by the cooler air surrounding the pipe. One company used to figure the expansion on an uncovered steam line as ⅔ of what the expansion would be in a covered line where all the metal was heated up and the surface of the pipe was protected from the influence of the cool surrounding air. This would make the expansion on this line—if uncovered—of

1.48 × ⅔ or 0.99 in.,

and some designers make it a practice to allow between 1⅛ in., and 1¼ in., per 100 ft., for expansion. Of course when the pipe is assumed to be installed at freezing temperatures the expansion will show somewhat more than under ordinary conditions.

The answer to the second part of the question as to how much the expansion would be increased if the steam pressure were raised to 100 lb., simply is a repetition of the previous calculations changing the temperature difference to correspond with the increased temperature of steam at the new pressure. Reference to steam tables shows that steam at 100 lb. pressure will have a temperature of about 338 deg. Fahr. Then the temperature difference on which the expansion must be calculated would be

338 F — 32 F or 306 F,

and the coefficient of expansion again would be 0.0000063 which for 306 deg. Fahr. gives an expansion per foot of

0.0000063 × 306 F or 0.0019278,

and for 100 ft. of

0.0019278 × 100 or 0.19278 ft.

This changed to inches would be

0.19278 × 12 in. or 2.31336 in.,

making the increase over the expansion when 5-lb. steam is carried of

2.31336 in. — 1.48176 in. or 0.83160 in.,

or just a little over ¾ in.

It must not be forgotten in calculating the expansion on steam pipe or any other pipes that the size—otherwise the diameter—has no bearing on the subject; a 1-in. pipe will expand just as much in its

length as a 4-in., or a 10-in., pipe because the amount of expansion is a function of the material, its length, and the amount of temperature rise. Of course if a different material is used the coefficient of expansion for the new material must be substituted for the coefficient of steel; a brass pipe will expand considerably more for the same length and temperature rise than will a steel pipe owing to the coefficient of expansion for brass being higher than for steel. But a 1-in. brass pipe will expand exactly the same amount in length (for the same temperature rise and the same length of pipe) as a 6-in. brass pipe.

Exact knowledge of just what the expansion will be in a run of pipe is necessary to the proper design of expansion bends and for the intelligent selection of expansion joints; this is especially true in the case of corrugated copper expansion joints and even in telescopic expansion joints the amount of travel provided must be adequate in order not to have trouble later. It is interesting to note that in higher temperatures the coefficient of expansion is inclined to increase thus adding to the length obtained by using the coefficient for ordinary temperatures.

## Modern Plumbing Requirements for Telephone Buildings

(Continued from Page 46)

provide special means for collecting and discharging sewage accumulating in the basement, by mechanical means. This was accomplished by the use of a single sewage ejector. The line of discharge from the ejector enters the house drain on the house side of the main trap. This connection from the ejector is shown in Fig. 1.

The ejector is operated by a rotary type air compressor.

In the boiler room the principal sump is located, and this is operated by two duplex sump pumps each capable of discharging 100 gals. of water per minute against a head of 30 feet.

By means of Fig. 7 a very clear idea can be obtained of the drainage, both clear and polluted, that has to be taken care of in the basement, and raised into the gravity sewer either by the sewage ejector or sump pumps.

In addition there are two other sumps in other parts of the basement, one in the transformer vault and the other in the cable vault. Each is operated by a small sump pump, discharging into the house drain.

Reference to Fig. 7 will show a drainage line from the battery room, serving sinks and floor drains, and discharging to the ejector.

Pipe, fittings and fixtures on this line are of acid-resisting cast iron construction.

It will be noted that the discharge from the blow-off or condensing tank goes to the sump. The same is true of the draw-off from the hot water storage tank.

A trench drain also connects with the sump through a 4-in. drain provided with running trap.

The present six-story building is supplied with water directly from the street. When the building


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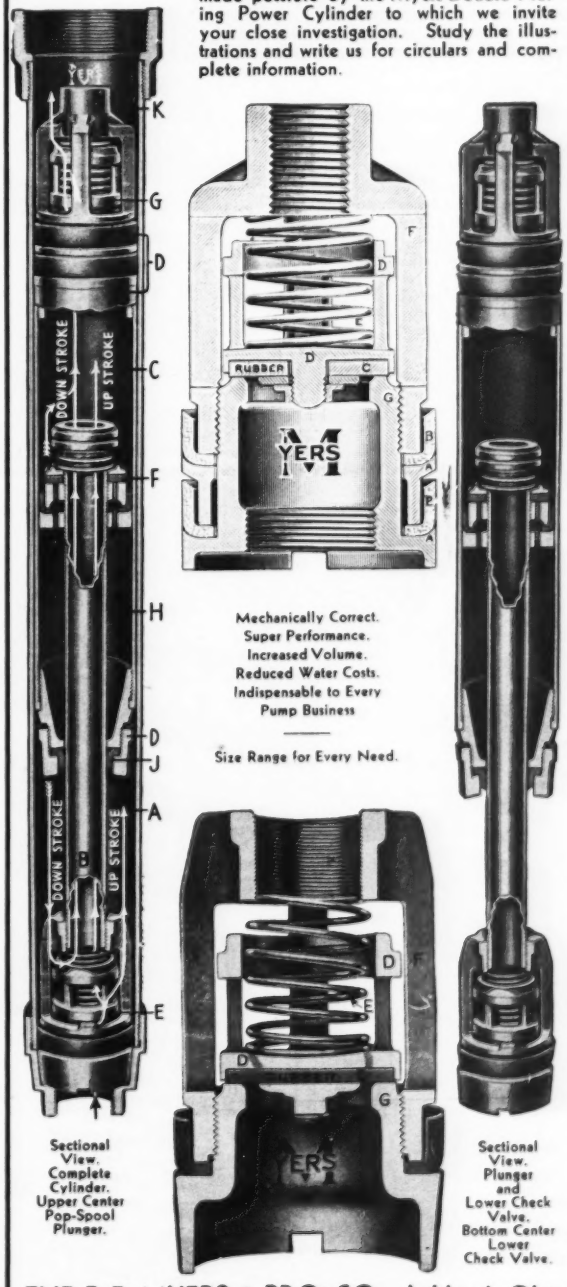


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is extended to twelve stories, as contemplated, a house tank, suction tank and pumps will be installed to serve the upper floors on a separate system.

Hot water is provided by a storage tank 48 in. by 96 in.

The general arrangement of the hot water tank and piping is shown in Fig. 7.

## Heating in Residences and Small Structures

(Continued from Page 43)

connection on the boiler. To the top of this loop is connected a balance pipe run from the steam runout on the boiler and connected on the boiler side of all valves in

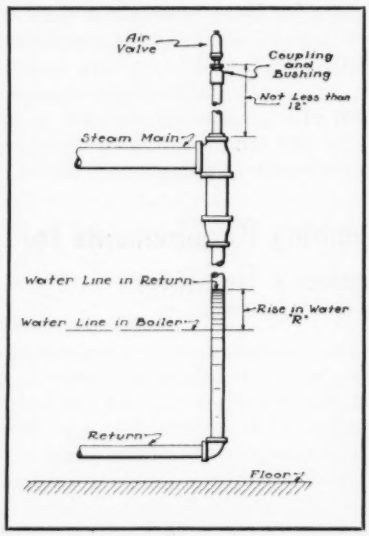



**Fig. 31 — Indicating an alternate position for the air valve on a one-pipe steam main and the rise in the water line that occurs in the wet return**

the steam main or runout. The size of this balance pipe is determined by the grate area in the boiler in accordance with the following:

| | |
|---|---|
| Grates of 4 sq. ft. or less | 1½ in. |
| Grates of 4 to 15 sq. ft. | 2½ in. |
| Grates of 15 sq. ft. or over | 4 in. |

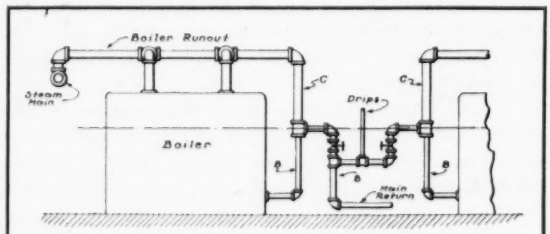



**Fig. 36—Recommended method of installing Underwriter's loop on battery of two boilers**

The size of the return is made the same as usual and it will be noted that the balance pipe is likely to be bigger than the wet return in some cases. A typical arrangement of the loop used in connection with either one or two boilers is illustrated in Figs. 35 and 36.

*This series of intensely practical articles by Mr. Alt will be continued in a later issue. Questions from readers on the subjects discussed will be welcomed, especially if they deal with actual problems.*

## "Why Not Help the Dealer to Make More Money on Gas Appliances?"

(Continued from Page 27)

From an executive viewpoint, the political situation that has arisen is far more significant than the economic situation. The action of Kansas and Oklahoma and the technical ruling of the Attorney General for Texas are familiar to all of us. It is futile to mourn the disastrous results from these legislative acts, nor is it, at this time, of much avail to point out the consequences.

The important thing is that these things could and *did* happen. Unfortunately, good economics are not always good public relations. If a trade relations program can be formulated and intelligently applied to strengthen our public relations, then our duty is obvious. We should make a sincere effort to do so.

### DESCRIBE ICE COOLING TESTS TO ST. LOUIS CHAPTER MEMBERS

"The Use of Ice in Space and Comfort Cooling" was the subject of the principal address at the February meeting of the St. Louis Chapter of the American Society of Heating and Ventilating Engineers. The speaker was Arthur Hargrave, president of the City Ice Co. of Kansas City, Mo. Mr. Hargrave described the results of experiments conducted by his company in both the wet and dry methods of using ice for cooling.

The meeting was in charge of President James M. Foster, and F. J. McMorran served as acting secretary. J. W. Cooper, a member of the code committee, and C. A. Helwig, chairman of the membership committee, submitted reports.

It was a successful meeting in every way and that those present were very much interested in Mr. Hargrave's address was apparent from the discussion which followed.

## The Metal Market

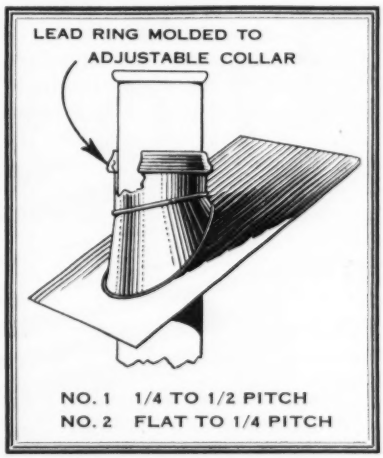
| | Mar. 1 | Avg. Jan., 1932 | Avg. Nov., 1931 | Feb., 1931 |
|---|---|---|---|---|
| PIG IRON— | | | | |
| No. 2 foundry, Chicago | $16.50 | $16.50 | $17.00 | $17.50 |
| PLATES AND SHEETS— | | | | |
| Steel boiler plates, Pittsburgh, per lb. | 1.50c | 1.55c | 1.60c | 1.65c |
| Blue annealed sheets, No. 10, Pittsburgh, per lb. | 1.70c | 1.75c | 1.85c | 1.90c |
| *Hot rolled annealed sheets, No. 24, Pittsburgh, per lb. | 2.20c | 2.20c | 2.40c | 2.35c |
| Galvanized sheets; No. 24, Pittsburgh, per lb. | 2.75c | 2.90c | 2.90c | 2.90c |
| TIN— | | | | |
| Straits tin (spot) New York | 22.10c | | | |
| LEAD— | | | | |
| E. St. Louis | 3.30c | | | |

**The Old Metal Market**
Dealers' Buying Prices

| | Per lb. | | Per lb. |
|---|---|---|---|
| Aluminum clippings | 11½c | Copper, light | 2¾c |
| Block tin pipe | 15½c | Heavy crucible copper | 4 c |
| Brass, light | 1¾c | Zinc, old | 1 c |
| Brass, heavy yellow | 2 c | Lead, heavy | 2¼c |
| No. 1 comp. red brass | 3 c | Solder joints (close cut) | 3¼c |
| Heavy copper and wire | 3¼c | | |

NOTE: Prices are those quoted on Monday of this week.
*Comparisons are with old classification No. 24 black sheets.


15% REDUCTION
Effective March 1, 1932




1½ in. to 6 in.

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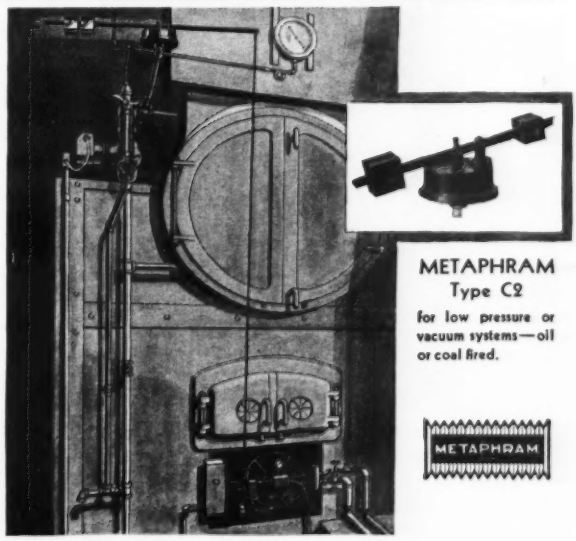
H. E. HESSLER CO., SYRACUSE, N. Y., U. S. A.




METAPHRAM Type C2
for low pressure or vacuum systems—oil or coal fired.

METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.

Descriptive Bulletins on Request

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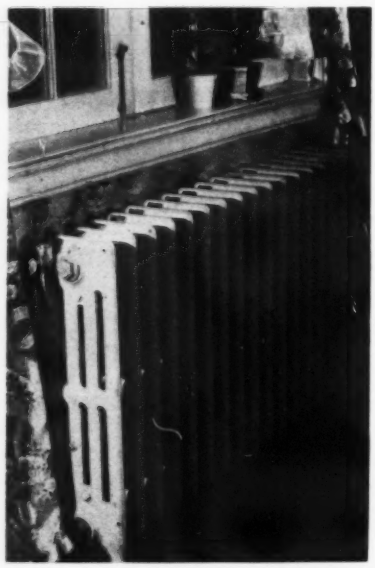
# *Items for* STORE, SHOP *and* JOB

OPPORTUNITIES for interesting the buyer are being put in the hands of the contractor-dealer through the enterprise of manufacturers in developing new and improved items for store, shop and job. In each issue, you will find in this department a selection of these items, chosen by the editors of DOMESTIC ENGINEERING for the information and use of its readers.

### RADIATOR DESIGNED TO SERVE AS HUMIDIFIER

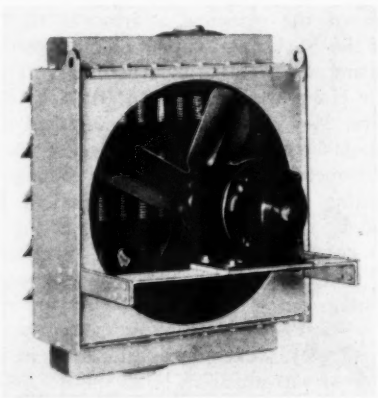
The accompanying illustration shows a radiator which has been designed to serve as a humidifier. As indicated in the photograph, the upper rear part of each section contains a water compartment. The top of the radiator is cut away and thus exposes the surface of the



water to the air for evaporation. The reservoir cup is shown at the left side of the radiator. This controls the water supply. An overflow wastes surplus water. It is stated that these humidifying radiators may be used to replace regular radiators already installed in steam, vacuum or hot water systems. Also, it is asserted that an average size radiator of this type evaporates about six gallons of water a day under ordinary conditions and that from 10 to 20 per cent of this radiation in the system will take care of humidity requirements. Seven different heights and four different widths are available. The manufacturer is the Utica Radiator Corp., Utica, N. Y.

### UNIT HEATER PARTS DESIGNED TO BE REMOVABLE

The accompanying illustration shows a unit heater and in the design of it, the parts have been made to be removable. For instance, the tubes are fastened into



the header with brass nuts and any make of motor can be used. The item is announced as an improvement over an older piece of equipment by the McCord Radiator & Mfg. Co., Detroit, Mich.

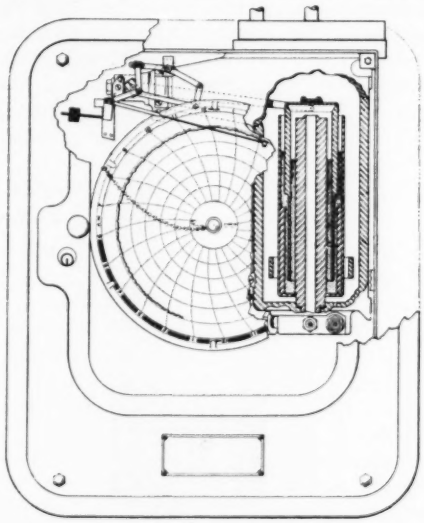
### DEVICE FOR RECORDING BOILER WATER LEVEL

Just recently, a device for recording boiler water levels was placed on the market. Its outstanding design features are listed as follows: It co-ordinates the feed water flow and the boiler water level records; it shows the true level in the drum instead of the gage glass level; it uses a direct reading chart and it may incorporate alarm devices for high and low levels. As for its workings, it operates on the difference in level obtained by making two connections to the water column or boiler drum; one connection being made to the water space and the other to the steam space where a constant water head

*Readers will find in this department news of our industry's progress in the manufacture of equipment. You can read of the efforts of manufacturers to develop products which will increase customer demand, will make shop methods more efficient and will simplify installation.*

is maintained in the connection by means of a steam condensing radiator and a reservoir. The variable head or water space connection is applied over a mercury sealed bell and the constant head connection is applied to the inside of this bell.

As the boiler water level rises or falls, the mercury sealed bell falls or rises and this motion is transmitted

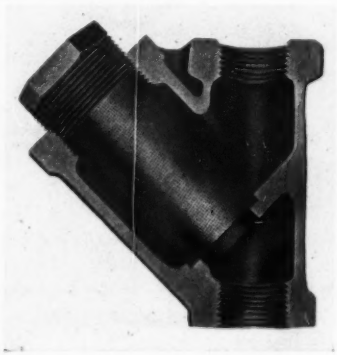


to the recording pen by a forked lever and a spindle which turns in pressure-tight bearings. A reversing linkage is employed between the spindle and recording pen so that the pen moves upward as the water in the boiler drum rises and moves downward as the water level drops.

The water level recorder may be incorporated with a feed water flow meter to record the two related factors on one chart for comparison. Also, remote indicators or recorders operating from the main recorder may be placed at other points. The device is manufactured by the Bailey Meter Co., Cleveland, Ohio.

## STRAINER FOR MECHANICAL TRAPS

Announcement is made of a strainer being placed on the market which has been designed to keep mechanical traps and similar apparatus free from dirt and other



foreign matter. It can be installed on the return line of low, medium and high pressure systems up to 125 pounds. Installation can be made either horizontally or vertically and the device is self-cleaning and drain-

Every room can be maintained at the desired temperature independently of every other room by the installation of Conco Automatic Temperature Control Valves. Installed like an ordinary radiator valve. You can use one, or one for every radiator, as each Conco Valve is an independent and complete temperature control system. High heating costs hit a new low with Conco Valves. Cost is comparable to manually operated valves. Catalog on request.

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C. D. S. Products Corporation is prepared to fill all orders. Place yours now. Have C. D. S. Gaskets on hand for every job of setting or re-setting closet bowls.

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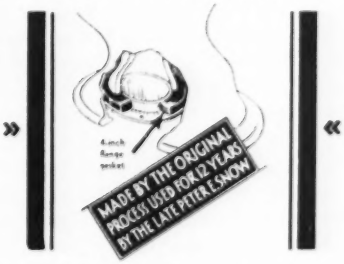



C-D-S PRODUCTS CORPORATION
Muncie : : : Indiana

THE C-D-S WATERPROOF GASKETS

ing when the plug is out or the blow-off valve is open. Six sizes run from ½ to 2-inch connections. It is stated that the device was developed with large capacity features in mind and that its construction permits of free flow through the strainer. It is made by Jas. P. Marsh & Co., Chicago.

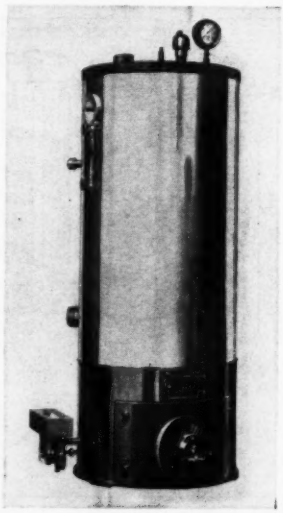
## AIR CONDITIONING UNIT FOR STEAM AND HOT WATER

There has just been placed on the market a unit for conditioning the air in homes which are heated with steam, hot water or vapor systems. As indicated in the accompanying illustration, the unit supplements the equipment already installed. It is designed to clean, warm, humidify and circulate the air during the winter and cool, clean and circulate it during the summer. The air cleaning is done by filtering and washing. The half-cylindrical cover houses the two centrifugal blowers and also serves as the air filter. The unit, not including the duct work, occupies approximately eight square ft. of floor space. After the air is drawn through the filter on the top of the cabinet, it is forced, by the twin

blowers, through a series of fine water sprays. Washing of the air takes place here and in order to prevent water from being carried into the duct work, the air and water spray is made to impinge against a louver unit or eliminator. In the winter time, this water spray humidifies the air in addition to washing it and in the summer time it cools and dehumidifies. Cooling and dehumidification of course depends upon the temperature and quantity of water used. In radiator systems, the outlet grille is located under the radiator so that the conditioned air is heated as it passes into the room. The air from the rooms is returned to the basement by means of grilles suitably located in the floor to facilitate complete ventilation and circulation. The blowers are high speed and have rated capacities of from 1,000 to 2,500 c.f.m. The eliminator is described as being reversible for self cleaning and the entire unit is thermostatically controlled. Holland Furnace Co. of Holland, Mich., is the manufacturer.

## OIL BURNER AND BOILER COMBINATION

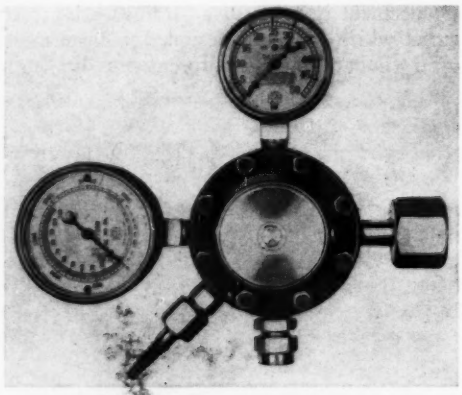
The oil burner and boiler market includes a new combined unit which just recently was announced. The item consists of a boiler of the vertical tube type with downdraft construction and an oil burner which is installed in the boiler at the factory. Among the features listed



for it are the following: It requires a floor space 3 ft. square in size and it carries the Underwriters' Laboratories and American Society of Mechanical Engineers labels. Also, tappings have been made in it for indirect heater connections. It is manufactured by Motor Wheel Corp., Lansing, Mich.

## SERIES OF OXYGEN AND ACETYLENE REGULATORS INTRODUCED

An entire series of new and improved oxygen and acetylene regulators has been introduced to take the place of a former line. This series comprises six regulators, two for acetylene and four for oxygen. All of the regulators have the same general external appear-

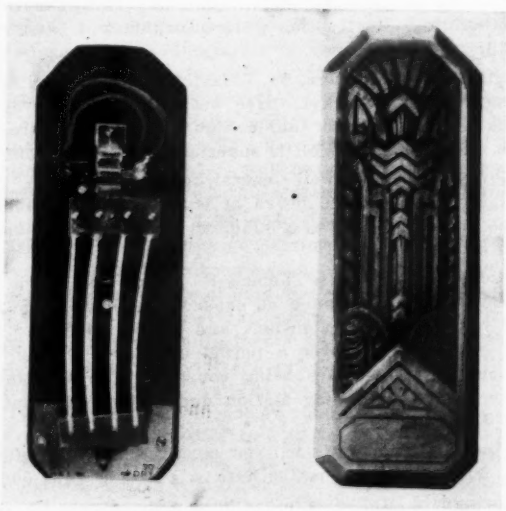


ance. The design of the items has been made so that the required volumes of oxygen and acetylene essential for maintaining a neutral flame at the blowpipe tip are delivered to the welding or cutting blowpipe at uniform pressure. Listed as one of the outstanding design features of the new regulators is a self-aligning valve of

the nozzle and yoke-type to insure sensitive action and freedom from leakage. The construction also has been worked out to eliminate any need for disturbing the diaphragm, bonnet, pressure adjusting screw, or pressure adjusting spring when replacing a worn valve seat. Access to the interior of the regulator is gained by removing a plug in the rear of the body. The working pressure gages are 2 in. and the cylinder pressure gages are 2½ in. in diameter. In accordance with standard color specifications for oxy-acetylene equipment, oxygen regulators are painted green and acetylene regulators are painted red. The line is manufactured by the Linde Air Products Co., New York City.

### DEVICE MARKETED FOR CONTROLLING HUMIDITY

A humidity control device which can be mounted on the wall is announced as having been placed on the market. It is available in two types. One is a low 6 to 8 volt contact type and the other is a high 110 volt, one ampere mercury tube switch type. Either will operate on A. C. or D. C. current. Views of the inside and cover of the mercury tube type are shown in the accompanying illustration. The base is made of bakelite while the cover is processed brass that can be finished to harmonize with other fixtures in a room. The item has three settings. They are for relative humidities of 50 per cent, 40 per cent and 30 per cent. In mild weather it should be set for 50 per cent, in cold weather at 40 per



cent and in very cold weather at 30 per cent. In cold weather, it is necessary to decrease the amount of humidity carried indoors to prevent the formation of condensate on windows. The element of the device is constructed so that it moves from one side to the other with slight changes of moisture content of the air. This movement causes a make and break electrical contact to actuate a solenoid valve or a magnetic switch. The solenoid valve will turn on or off water or steam. The magnetic switch can be used to open and close dampers. The device is designed to withstand temperatures within the range of freezing and 125 deg. Fahr. and relative humidities between 10 and 90 per cent. It is manufactured by Humidity Control Co., Tacoma, Wash.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Send me details about the F-M Dealer franchise if there is not an active dealer in my territory.

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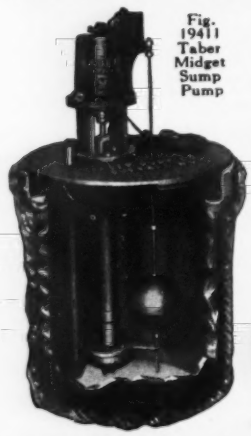

Fig. 1941 Taber Midget Sump Pump

***It works . . . . . when needed most***

After heavy rain-storms there is an increased demand for Taber automatic Midget Sump Pumps. Frequently they replace "low price" cellar drainers inadequately motored.

Why wait for a peak load to tell whether the pump will work? Avoid troublesome, profitless service calls . . . install Taber first. The owner of any sump pump expects "Dry Cellar Insurance." He gets it with a Taber Midget.

Bulletin and prices on request. Also see Page 923 Domestic Engineering Catalog

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TABER PUMP CO *Est 1859*
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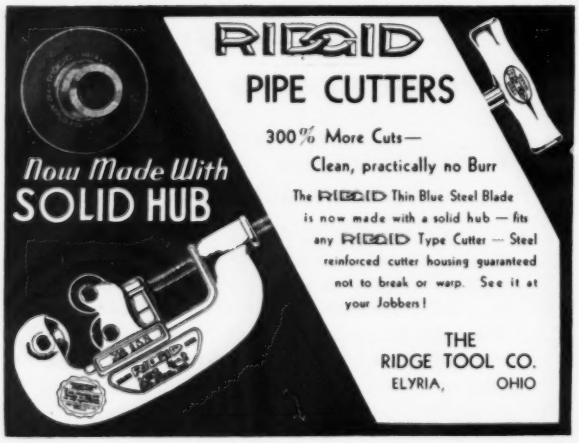
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300% More Cuts—
Clean, practically no Burr
The RIGID Thin Blue Steel Blade is now made with a solid hub — fits any RIGID Type Cutter — Steel reinforced cutter housing guaranteed not to break or warp. See it at your Jobbers!
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# Large Construction Projects

*Even though new construction is at a low ebb compared with recent peak years, the fact remains that new projects are being started every day. Listed below are just a few of the larger building operations, either contemplated or only recently started.*

**Bloomfield, Conn.**—The Oxford school has acquired a 35-acre plot for school expansion to include gymnasium, assembly, refectory, administration and class room units. Architects W. F. Brooks and F. D. W. Glazier, Gold and Lewis streets, Hartford, will prepare the plans.

**Portland, Me.**—The Maine Independent Oil Dealers Association has plans for a bulk oil terminal with a proposed tank storage capacity for 5,000,000 gals. Charles Murray, Bangor, Me., is chairman of committee.

**Hartford, Vt.**—The Central Vermont Railroad Company is having plans prepared for a new railroad station here to cost approximately $150,000.

**Elsah, Ill.**—Principia College of St. Louis, Mo., is building a group of thirty buildings here, seven of which are well under way. The St. Louis Engineering & Heating Co. has the heating contract for the new buildings, while the Gloeckner-Melville Plumbing Co. will do the plumbing work.

**Cortland, N. Y.**—M. E. Lewis, of Binghamton, N. Y., has been awarded the contract to install heating equipment in the new Marathon, N. Y., central school, to cost more than $200,000. R. E. Lewis, of Cortland, N. Y., received the contract to install plumbing throughout the new building, construction work on which will be started in April.

**White River Junction, Vt.**—Haynes & Mason, 336 Main street, Fitchburg, Mass., have been selected to prepare plans for a $100,000 junior high school to be erected here. George S. Goodell is superintendent of schools.

**Lowell, Mass.**—Lowell General hospital, Arthur G. Pollard, president of the board of trustees, has announced plans for the erection of a $250,000 unit during the latter part of the year.

**Middletown, Conn.**—Thomas F. Bowe, New York engineer, has recommended an expenditure of about $625,000 for additions, extensions and improvements to the city sewer system over a period of years. During the present year plans are being considered for two interceptors and a pumping station and a disposal plant to cost $200,000.

**Findlay, Ohio**—Bids will be received March 11 for a new postoffice to be erected here at a cost of $230,000.

**Springfield, Mo.**—A site has been selected near Fayetteville for the United States veterans' hospital, and construction is expected to start soon.

**Putnam, Conn.**—The proposed new postoffice for this city will be placed on the market for bids by contractors some time during the latter half of April, according to Treasury department officials.

**Philadelphia, Pa.**—Revised plans are being prepared for a proposed $300,000 apartment house at Lincoln drive and Wissahickon avenue. Otto Steinacker is the owner.

**Philadelphia, Pa.**—Present plans materializing, a group of construction operations, which are expected to give impetus to building here, will get started in a short time. These projects are the new Federal Reserve Bank addition; proposed library for Girard College; the garage building planned for the corner of Twelfth and Filbert streets for the Philadelphia Saving Fund Society, and the contemplated plant of the Keebler-Weyl Baking Co.

# New Trade Literature

**Ignition Transformers for Oil Burners**

General Electric Company of Schenectady, N. Y., is mailing the trade a catalog of 8 pages, 8 x 10½ in., with illustrations and detailed descriptions of its ignition transformers for oil burners. Tables of dimensions, capacities and shipping weights are included.

**Two Bulletins About Stoker Drives**

Gears and Forgings, Inc., of Cleveland, Ohio, have just issued two bulletins, Nos. 25 and 26, illustrating and describing two types of stoker drives, a two speed gear unit and a three speed unit. These units are made in various sizes with capacities of 50 to 300 pounds of coal per hour.

**Dehumidification of Air with Calcium Chloride**

The Dow Chemical Company of Midland, Mich., has just issued a special development bulletin, containing a treatise on "Dehumidification of Air with Calcium Chloride." The treatise is published as a copyright manuscript and consists of 40 pages, 8½ x 11 in., printed with typewriter type. The contents are divided into the following chapters: 1, Properties of Calcium Chloride. 2. Rate of Water Absorption by Calcium Chloride. 3, The Calculation of Specific Dehumidification Problems. 4, Summary of Problems. 5, Discussion and Conclusions.

**"The Burning Question Answered"**

"The Burning Question Answered," is the title of an 8-page booklet of the unusual size of 20x15 in., which has just been issued by the Kelsey Heating Company of Syracuse, N. Y., featuring one of this company's gas-fired heating systems. This system is designed to heat, humidify, purify and ventilate in such a way that it will circulate a supply of warm, clean humidified fresh air, creating health and comfort in the home, even in zero weather. The manufacturer is of the opinion that this system will meet the modern demands for conditioned air and that it offers the heating contractor great profit-making opportunities. The booklet brings detailed illustrations of the system as well as photographic reproductions of homes in which this system has been installed.

**The A. S. H. V. E. Guide 1932**

The American Society of Heating and Ventilating Engineers Guide 1932 has been issued. This, the 10th edition, is dressed in new style of binding—a neat, light blue, flexible cover. There are four major sections, namely, the Text section, the Manufacturers' Catalog Data section, the Index to Modern Equipment and the Membership Roll of the Society.

The Text section contains 40 chapters of important data on the design and installation of heating, ventilating and air conditioning systems. Approximately 50 per cent of the subject matter is entirely new, and every chapter has been rewritten and revised. Many subjects not previously treated in The Guide, are included.

The Catalog Data section has been carefully co-ordinated with the text, and contains supplementary information on specific materials, equipment and accessories available for heating and ventilating service. In the Catalog Data section will be found sizes, shapes, capacities, dimensions, space requirements and applications, so important to the engineer, architect and contractor in planning, specifying and installing materials and equipment. The two sections are so interlocked that they are practically indispensable to each other, and for the best results it is recommended that the corresponding references in each section be consulted in all cases. The book consists of 956 pages, and its price is $5. It can be obtained from the American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York, N. Y.


BURKS SUPER-TURBINE PUMPS

Water Comes First!

*Saturday night don't mean a thing without plenty of water under pressure!*

A fine saddle on a "stake and rider" fence is silly. My word! *Plumbing fixtures* without water are *just as silly!*

You have the saddle, we have the horse. Install a genuine Burks Super Turbine Water System and *you're on your way!*

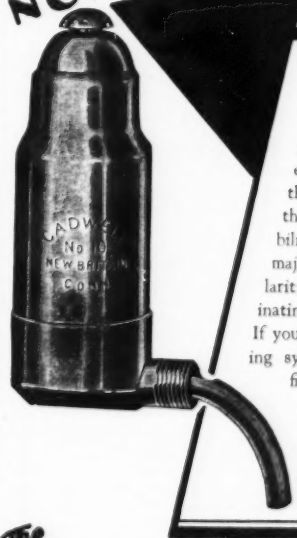
Put a horse under that saddle!

SERIES 8750 HOME WATER SYSTEM

NEW BULLETINS:
*Condensation Return Bulletin No. 95*
*Water System Bulletin No. 94-C.*

DECATUR PUMP COMPANY DECATUR, ILLINOIS

CADWELL NO. 10 AIR VALVES



THE quick action of CADWELL No. 10 Air Valves in preventing the escape of steam and allowing the exhaustion of air from the radiator and the dependability of this action, are the major reasons for their popularity with the most discriminating of heating contractors. If you are finding some heating system particularly difficult, due to the non-heating of radiators, try CADWELL No. 10 Air Valves.

*Get them from your jobber.*

The BEATON & CADWELL MFG. CO.
*Established 1894*
NEW BRITAIN, CONN.

*Sometimes* **WE** *are surprised*

BUT we try not to show it... This time a husband said his wife was arriving in 10 minutes, and could we help him arrange a surprise dinner party for her? Here was a list of 12 guests ... would we telephone them and "fix things up" while he dashed to meet his wife at the station? There were 14 at that dinner ... and his wife *was* really surprised!

It's our belief that a hotel should do *more* than have large, airy rooms, comfortable beds, spacious closets. Beyond that, we daily try to meet the surprise situation *(without surprise)*, no matter what the guest wants.

*Extra service at these 21*
**UNITED HOTELS**

NEW YORK CITY'S *only United*.....The Roosevelt
PHILADELPHIA, PA.....The Benjamin Franklin
SEATTLE, WASH.....The Olympic
WORCESTER, MASS.....The Bancroft
NEWARK, N. J.....The Robert Treat
PATERSON, N. J.....The Alexander Hamilton
TRENTON, N. J.....The Stacy-Trent
HARRISBURG, PA.....The Penn-Harris
ALBANY, N. Y.....The Ten Eyck
SYRACUSE, N. Y.....The Onondaga
ROCHESTER, N. Y.....The Seneca
NIAGARA FALLS, N. Y.....The Niagara
ERIE, PA.....The Lawrence
AKRON, OHIO.....The Portage
FLINT, MICH.....The Durant
KANSAS CITY, MO.....The President
TUCSON, ARIZ.....El Conquistador
SHREVEPORT, LA.....The Washington-Youree
TORONTO, ONT.....The King Edward
NIAGARA FALLS, ONT.....The Clifton
WINDSOR, ONT.....The Prince Edward

UNITED HOTELS

# Business Changes

**Beaumont, Tex.**—The Modern Plumbing Co. has changed its name to Modern Plumbing and Electric Co. P. Nicoletti continues as manager of the company.

**Cincinnati, Ohio.**—P. J. Ryan has purchased the plumbing and heating business of the late George A. Weiss at 6207 Madison road. He will continue the business under his own name at the same address.

**Mayfield, Ky.**—Gus Stevens, Jr., formerly manager of the R. H. Vandevelde Co. of this city has formed a partnership with the Ed D. Hannan Plumbing and Heating Co. of Paducah, Ky. The newly organized partnership has purchased the plumbing and heating business of J. L. Phipps, which has been in existence here for thirty years. The new firm took possession on February 1, in the same building formerly occupied by Mr. Phipps.

**Erie, Pa.**—James Saint, president and general manager of the Erie Hardware Company, 1220 State street, has announced the addition of a plumbing and heating engineering, contracting and service department, functioning under the management of C. B. McCray, formerly shop superintendent of the Pickett Hardware Co., Warren, Pa.

**Auburn, Wash.**—W. E. Davis has disposed of his plumbing and heating business to Harold I. Davis.

**Grand Rapids, Mich.**—The Knee Heating Co., 706 Wealthy avenue, has changed its name to the Knee Company.

**Manitowoc, Wis.**—Bernard Nelesen and Edwin W. Braunel have retired from the plumbing firm of Nelesen & Braunel, and the business has been taken over by two sons and a daughter of Mr. Nelesen, Albert, Hubert and Clara Nelesen. The firm was established 20 years ago.

**Minneapolis, Minn.**—The Morgan-Gerrish Co., heating and power equipment dealers, has moved its offices from 808 La Salle avenue to 307-14 Essex building, this city.

# New Contractors and Incorporations

**Wilmington, Del.**—The firm of Rowen and Rowen, Inc., has been chartered with a capital of $25,000, to establish and operate a plumbing, heating and ventilating engineering contracting business. The Corporation Fiscal Company represents the new concern.

**Newark, N. J.**—The Ray Engineering Company, Inc., has been chartered, with a capital of $100,000, to establish and operate a plumbing engineering and contracting business. August A. Lindahl, attorney, of Irvington, N. J., represents the new concern.

**Bordentown, N. J.**—With a capital of 2,500 shares of no par common stock, the Automatic Engineering Co., has been organized and incorporated. It is planned to establish and operate a heating engineering, contracting and sales business. Samuel F. Garrison, local attorney, represents the new concern.

**Wilmington, Del.**—Capitalized at $10,000, the firm of Arthur S. Haney, Inc., has been chartered, to establish and operate a plumbing, heating and ventilating contracting and engineering business. The Corporation Fiscal Co. represents the new concern.

**New York City**—Richard Anderson and associates have chartered the firm of Richard Anderson, Inc., with a capital of $10,000, to establish and operate a plumbing

**Left to right: Mr. and Mrs. J. Hoysgaard, Park Ridge, Ill., and Mrs. and Mr. E. J. Brierly, Oak Park, Ill. Photos taken at the annual convention of the Heating and Piping Contractors National Association, held recently at Louisville**

engineering and contracting business. W. E. Wilman, 17 John street, represents the new concern.

**White Plains, N. Y.**—The firm of James Martino, Inc., has been organized with a capital of $10,000, to establish and operate a plumbing engineering and contracting business. D. Tepp, local attorney, represents the new concern.

**Brooklyn, N. Y.**—With a capital of $10,000, the State Plumbing and Heating Co. has been organized and incorporated. It is planned to establish and operate a contracting and engineering business. J. Elden, 26 Court street, represents the firm.

**Newark, N. J.**—Walter H. Schleckser and associates have chartered the firm of W. H. Schleckser, Inc., with a capital of 1,000 shares of no par common stock, to establish a plumbing and heating engineering and contracting business. The new concern is represented by Frederick Stoddard, Irvington, N. J.

**New York City—The** System Company, Inc., has been chartered with a capital of $10,000, to establish and operate a plumbing contracting business. The law firm of Davis, Polk, Wardwell, Gardiner and Reed, 15 Broad street, represents the new concern.

**Alameda, Calif.**—V., H. Richit has engaged in the plumbing and heating business at 3258 Thompson avenue.

**Highland Park, Mich.**—The Stoker Sales & Service Co., Inc., has been chartered, with headquarters at 20 Pasadena avenue, to deal in and equip boilers, heating plants.

**Milwaukee, Wis.**—Magna Heating Systems, Inc., has been formed to deal in heating, ventilating and cooling machinery and equipment. The firm is capitalized with 300 shares of no par value. The incorporators are: James A. Ashworth, James A. Richards and F. A. Whalen.

**New York City**—The firm of Schram and Cohen, Inc., has been chartered, with a capital of $10,000, to establish and operate a plumbing engineering and contracting business. J. S. Berg, 225 West Thirty-fourth street, represents the new concern.

**Mount Vernon, N. Y.**—Robert G. Aurisey and associates have chartered the firm of R. G. Aurisey, Inc., with a capital of $10,000, to establish and operate a plumbing engineering and contracting business. B. I. Tunick, local attorney, represents the new concern.

**Brooklyn, N. Y.**—With a capital of $5,000, the Price Plumbing and Heating Co. has been organized and incorporated, to establish and operate a plumbing and heating engineering and contracting business. F. A. Bellucci, of Corona, Long Island, represents the new firm.

**Orange, N. J.**—Capitalized at $50,000, the Hunter-Lindsay Corp. has been chartered, to establish and operate a plumbing engineering and contracting business. Elvin R. Giordano, local attorney, represents the new firm.

**New York City**—The Sturdy Plumbing Corp. has been chartered, with a capital of $10,000. It is planned to establish a plumbing contracting business.


# Tap the Main and Follow Thru With Hays

This popular Erie Tapping Machine taps Water or Gas Mains under pressure and inserts any Corporation Stop.

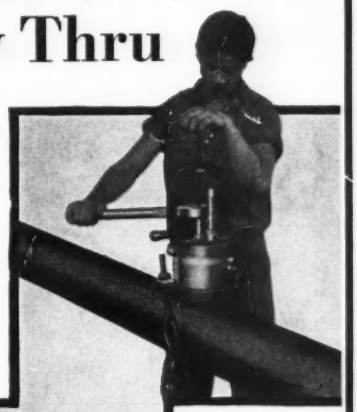
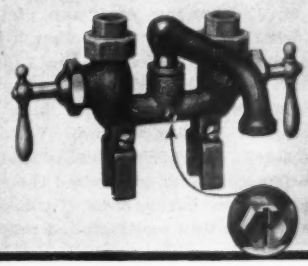
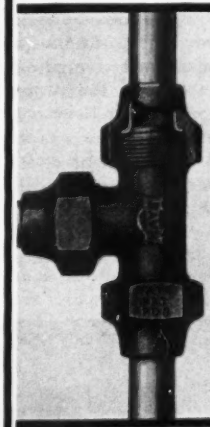


Fig. 185T—Signet Compression Stop and Drain, Inlet and Outlet ends for Copper Pipe.

Fig. 175E—Haysco Automatic Compression Stop and Drain. Inlet and Outlet ends for Copper Pipe.

Fig. 188 D — Mova Double Laundry Tray Faucet. Quick Compression with Drain Outlet.





At the left is a Hays Copper Plumbing Fitting featuring the Hays Double Seal Connection. There are more than 400 sizes and styles of these Hays Copper Fittings to choose from.

Fig. 179 F at the right is an Erico Double Sink Faucet. Flanged Female I. P. All Brass Lever Handles and Tray.

*Write for a copy of "Street to Bath"*

**HAYS MFG. CO., ERIE, PA.**

# HAYS

**DOUBLE SEAL CONNECTIONS**

COPPER, BRASS & IRON PRODUCTS

# What Women Are Doing

## NEW YORK WOMEN ORGANIZE FOR NATIONAL CONVENTION

A new division of the Women's Auxiliary of the National Association of Master Plumbers was created February 15 when 75 wives of Master Plumbers of the five boroughs of New York City held their first organization meeting at a luncheon, under the auspices of the National convention and exhibit committee.

M. J. Kennedy, chairman of the committee, appointed the ladies present to membership on the Women's entertainment committee for the 1932 convention. Mr. Kennedy stated that additional appointments to this committee will be made at a later date.

Mrs. J. Preston Perham, West Roxbury, Mass., National president of the Women's Auxiliary, was guest of honor at the meeting, and supervised the organization of temporary units in the boroughs of Richmond, Brooklyn, the Bronx, and Manhattan and installed regular officers for the newly formed Queens Borough Women's Auxiliary. She was assisted by Mrs. J. O. Stapf, Albany, N. Y., president of the New York State Women's Auxiliary; Mrs. William Metcalf, Rockville Center, national director of the Women's Auxiliary; Mrs. Laura Zimmermann, Union City, N J., national director, and by Mr. Kennedy as president of the Greater New York association.

The coming of the golden anniversary home coming convention of the National association to New York City was the impetus behind the formation of the New York City auxiliaries. Mr. Kennedy opened the meeting with a brief address, stressing the need of an organization of wives of New York City master plumbers to assist in entertainment plans for the convention days of June 20-23. He then turned the meeting over to Mrs. Perham, who called upon the National officers present for short talks.

Officers of the Queens Borough association, regularly installed at the meeting, were: Mrs. Jacob Stockinger, president; Mrs. Henry Billhard, 1st vice president; Mrs. C. Budrie, 2nd vice president; Mrs. Joseph Mittash, treasurer; Mrs. L. Redmond, secretary; trustees: Mrs. J. W. Peter, Mrs. Nicolas Donohoe and Mrs. George Moonan.

**The first organization meeting of wives of greater New York City master plumbers brought out a group of more than 75 from the five boroughs of New York City. The group attending the organization meeting is shown above**

**Left to right: Mrs. Charles Zimmermann, Union City, N. J., national director; Mrs. J. O. Stapf, Albany, N. Y., state president; Mrs. J. Preston Perham, West Roxbury, Mass., national president; and Mrs. William Metcalf, Rockville Center, N. Y., national director**

Temporary officers were appointed for the other boroughs. These temporary officers will call meetings for organization of locals in their respective boroughs within the coming fortnight and Mrs. Metcalf will assist temporary officers in the installation of regular officers.

Temporary officers appointed for boroughs were as follows: Bronx: Miss Alice Roth, temporary chairman; Miss Marcella Egan, temporary secretary. Manhattan: Mrs. T. P. McLoughlin, temporary chairman; Mrs. John Sharp, temporary secretary. Richmond: Mrs. E. Siekman, temporary chairman; Mrs. E. Charette, temporary secretary. Brooklyn: Mrs. M. J. Kennedy, temporary chairman.

The newly-organized Bronx Auxiliary held its first meeting on February 17 and elected the following officers for the ensuing year: Miss Alice Roth, president; Mrs. William Kroepke, vice president; Miss Marcella Egan, secretary; Mrs. Theresa Grant, recording secretary; Miss Anna Egan, treasurer, and Miss Victoria Magaldi, publicity chairman.

It was decided that meetings will be held the third Wednesday of each month. Plans were discussed for a social gathering, to be held in the near future.

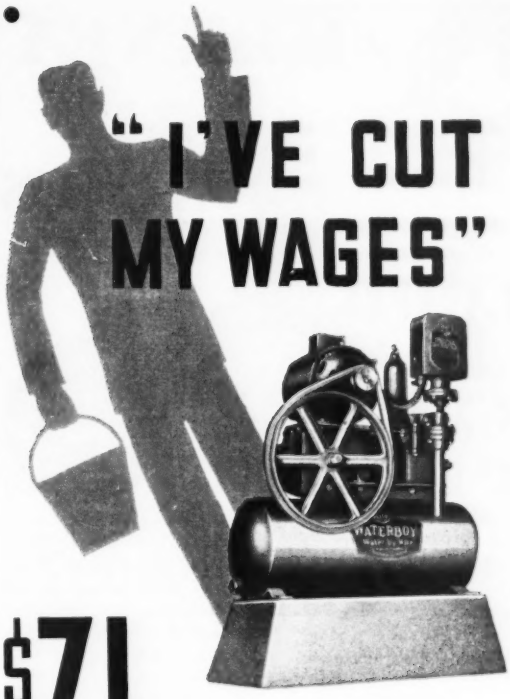
## ILLINOIS TAKES ACTION TO STRENGTHEN STATE AUXILIARY

The Women's Auxiliary of the Illinois Master Plumbers Association met recently in Springfield for its annual convention. Steps were taken to strengthen the organization and to this end the local groups throughout the state have been asked to participate in more social affairs during the coming year. It felt that these gatherings will tend to create a better spirit. Reports submitted by the officers showed that a local auxiliary was organized in Champaign-Urbana during the year with a total of nine members; also that two new members had joined the state auxiliary.

Owing to illness, Mrs. W. F. Hildeman of Chicago Heights was unable to accept another term as president and she was succeeded in office by Mrs. C. C. Rosenfield of Rock Island. Mrs. Fred Hager of Chicago was elected first vice president; Mrs. Roy Young of the Champaign-Urbana auxiliary second vice president; Mrs. Henry Swade of Chicago, third vice president, Mrs. Fred R. Bailey of Rockford was re-elected treasurer and Mrs. C. A. Bolton of Chicago Heights was re-elected secretary.

Mrs. Hildeman was presented with an appropriate gift in appreciation of her services during the past year. Mrs. Robert Liss of Chicago, national vice president, delivered a message from the national president. Mrs. H. H. Diedesch, past state president, reported as delegate to last year's national convention.

The following local presidents submitted their annual


$71 F.O.B FACTORY *is all I ask to pump water for life*

Suppose you were to make an offer like *that* to your prospects for water systems. Suppose you were to say, "I'll pump all the water you can use in a year for just a few cents a day . . . and after that, I'll work for nothing."

You would probably get the job, wouldn't you?

And now you *can* make just such an offer. For the price of the Delco Waterboy has been reduced to *only* $71.00, f. o. b. factory. And it can be bought on terms that bring payments down to a few cents a day.

Only $71.00. And what a water system it is for the price! As with all Delco Water Systems, it operates against 30 pounds pressure—three times as much as ordinary pumps. This means plenty of force behind the faucets. And it also means more water . . . fully 20% more per hour.

Besides the Waterboy, there's a complete line of Delco Water Systems for deep and shallow wells—all with prices substantially reduced. Write for full details about the Delco Waterboy and other Delco Water Systems today. Use the coupon.

DELCO WATERBOY

A GENERAL MOTORS VALUE

Delco Appliance Corporation,
Dept. B-28, Rochester, N. Y.
Please send me full details about Delco Water Systems and the opportunity they offer for immediate profits.

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KEENEY AIR VALVES

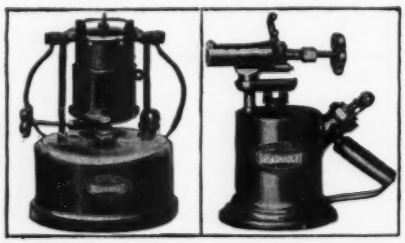
FLOOR *and* CEILING PLATES

The "Spend for the Home in 1932" movement is working in territories everywhere. Are you ready to offer Keeney Air Valves and Floor and Ceiling Plates? It's the little jobs most people start with first, and on their success depends future business. And believe us, you can stake everything on the performance of the entire Keeney line. *Get details from your jobber.*

MANUFACTURERS AND WHOLESALERS:
*Write for our NEW CATALOG—just off the press*

THE KEENEY MFG. CO., NEWINGTON, CONN.

A NEW LINE..
of WALL products
at a NEW LOW PRICE



*Write for complete information. Ask for our plumbers' circular.*

THOUGH lower in price than ever before, each is a newly developed WALL product designed to serve best your most particular needs, without the sacrifice of typical WALL quality features! It will pay you to get in touch with your jobber at once—or for jobbers to get in touch with us.

P. Wall Mfg. Supply Company · Pittsburgh, Pa.

SINCE WALL SUPERIOR PRODUCTS 1864

DREADNAUGHT
"Service with Safety"
BLOW TORCHES . . . FURNACES AND OILERS


reports: Mrs. N. J. Mergenthaler, North Shore Auxiliary; Mrs. Walter Blyth, North and North West Auxiliary; Mrs. Fred Hager, South Side Auxiliary; Mrs. Charles Stange, Rock Island-Moline Auxiliary; Mrs. F. A. Kveton, Midwest Auxiliary; Mrs. A. W. Carlson, Rockford, and Mrs. W. T. Holmes, Champaign and Urbana Auxiliary.

A special program of entertainment was provided for the ladies, which included cards, a theater party and luncheons and a sightseeing trip. The annual banquet was an enjoyable affair.

## OHIO STATE AUXILIARY HOLDS ANNUAL CONVENTION

Mrs. Oliver Hoffman of Akron was elected president of the Women's Auxiliary to the Ohio State Association of Master Plumbers at the organization's recent convention in Cincinnati. Mrs. Andrew Murphy, Cincinnati, was elected state vice president; Mrs. A. W. Baum, Canton, secretary, and Mrs. Howard Baker, Toledo, treasurer.

All of the convention business was transacted at the opening session and the balance of the meeting was devoted largely to affairs of a social nature. A shopping tour on the morning of the second day was followed by luncheon in the Netherland Plaza hotel. In the afternoon the visiting ladies enjoyed a sightseeing trip to points of interest in Cincinnati. That evening a vaudeville show was staged for all attending the convention. Luncheon on Thursday was followed by cards, and in the evening the grand ball was held in the hotel ball room.

Miss Alma Niesen was chairman of the general convention committee. Miss Florence C. Manley; Mrs. A. J. Murphy, Mrs. George Doench and Mrs. Robert Carroll were also on the committee.

Others who took an active part in arranging for the convention were: Mesdames E. B. Kleine, M. R. Manley, John Doherty, E. Frank, George Ammon, J. J. Vogelpohl, V. Wegelin, J. Hirth, C. Beaumont, M. Daly, William Tillett, Charles Woelfel, H. Biedenbach, Fred Smith, George Breitenbach and Miss Helen Manley.

## NEW JERSEY EXECUTIVE BOARD MEETS

The Woodrow Wilson hotel, New Brunswick, N. J., was the scene of a meeting of the executive board of the Women's Auxiliary to the New Jersey State Association of Master Plumbers on January 27. Mrs. J. Miller Heidweiler of Trenton, state president, called the meeting to order. Delegates from Jersey City, North Hudson, Trenton, Orange, Montclair, New Brunswick and Englewood attended. The New Brunswick master plumbers and auxiliary members entertained the visitors with a card and dinner party. Mrs. Heidweiler was presented with a lovely bouquet of flowers by the New Brunswick auxiliary. The next meeting will be held in North Hudson, N. J., in April.

## CHICAGO GROUP HOLDS INTERESTING MEETING

The members of the Chicago Master Steamfitters Auxiliary experienced a pleasant surprise at their January 18 meeting. Two interesting gentlemen came to visit, a Mr. C. C. Collins and his son-in-law, Mr. F. L. Clark, from St. Louis. Mr. Collins explained that by substituting the letter "w" for the letter "d" in the word "depression," and eliminating the "i," the result is "We Press On." Some of the ladies began to inquire about these gentlemen from St. Louis—if they were members of the association there or not. Mr. Collins turned out to be Mrs. Fred Lamb, past president, and Mr. Clark was Mrs. Shroeder, secretary. The meeting was then adjourned for an afternoon of cards and refreshments.

## WISCONSIN ELECTS MRS. BRAH PRESIDENT

The city of Milwaukee, Wisconsin, was the gathering place recently for the annual convention of the Wisconsin Women's Auxiliary. It was a 3-day meeting and the well arranged program contributed much to the success of the convention.

Mrs. Joseph Brah of Milwaukee was elected state president for the ensuing year. The other officers elected were Mrs. Otto A. Waskow, Milwaukee, first vice president; Mrs. L. C. Pugh, Racine, second vice president; Mrs. Arthur Thomas, Green Bay, third vice president; Mrs. O. H. Dittmer, Milwaukee, recording secretary; Miss Clara Wittig, Milwaukee, corresponding secretary; Mrs. Henry Weber, Milwaukee, treasurer; Mrs. Rose Friend, Milwaukee, chaplain, Mrs. Walter Dusold, Milwaukee, chairman entertainment committee, Mrs. Albert Haack, Milwaukee, vice chairman entertainment committee, Mrs. Peter Vogt, Milwaukee, chairman reception committee and Mrs. George Stoehr, Milwaukee, vice chairman.

Mrs. Fred Westfahl, president of the Milwaukee auxiliary, delivered the official message of welcome. Dr. John P. Kohler, commissioner of health, made an interesting talk on health and sanitation. In a brief address, Walter Dusold, past president of the Milwaukee Master Plumbers Association, expressed his appreciation for the valuable assistance that the auxiliary members have given the master plumbers' organization.

The report of Mrs. Jacob Schuh showed the auxiliary to be in sound financial condition. A letter of greeting was read from Mrs. J. Preston Perham of West Roxbury, Boston, Mass., National president. Among the National officers present were Mrs. Rose R. Friend and Mrs. F. C. Kuetemeyer, both of Milwaukee and historian and third vice president respectively of the national organization.

The roll call of past state presidents was answered to by Mesdames Fred C. Westfahl, Milwaukee, Louis Willing, Racine, Arthur Thomas, Green Bay, A. Zurheide, Sheboygan and Charles Hardow, Manitowoc.

The set-up of the new board of directors for the state auxiliary follows: Mesdames John Feiner, Racine, Fred C. Westfahl, Milwaukee, Walter Dusold, Lewis R. Schmaus, Charles Pelunek, Fred C. Kuetemeyer, R. H. Meyer, Edwin Dobner, Joseph Schuh, Albert Haack, Peter Vogt, and George Stoehr, all of Milwaukee, Albert Brunk, Racine and J. Vowinkle.

## SAN FRANCISCO AUXILIARY INSTALLS AND ENTERTAINS OFFICERS

Two delightful occasions have marked the recent activities of the Ladies Auxiliary to the San Francisco M. P. A. One occurred early in January at the Hotel Stewart, in the form of a luncheon marking the installation of new officers; the other event being the dinner and card party tendered the retiring president, Mrs. William Koenig, at the Hotel Sir Francis Drake, on the evening of January 23.

The installation ceremony was featured by the induction of the following officers: Mrs. Ed. Ballin, president; Mrs. Bessie Koenig, vice president; Mrs. Joseph Sand, secretary-treasurer; and Mrs. L. Ravanni, marshal. Speaking on behalf of her sister officers as well as herself, Mrs. Ballin paid gracious respect to the president and other officers whose terms had just expired, her address of acceptance also giving promise of continued progress during the new year.

The dinner party honoring the retiring president was likewise a gay affair, to which the members' husbands were invited. In the capacity of toastmistress, Mrs. Joseph Sand called on the new officers, each of whom gave short,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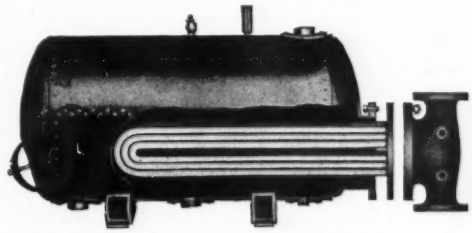
STORAGE HEATERS

*For Industrial Plants, Laundries, Apartments, Schools, Clubs, Hotels, etc.*



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*Makers of Heat Exchangers, Coolers, Oil Separators, Coils and Bends*

THE NATIONAL PIPE BENDING CO.
*Est. 1883*
174-B River St., New Haven, Conn.
BOSTON NEW YORK PHILADELPHIA

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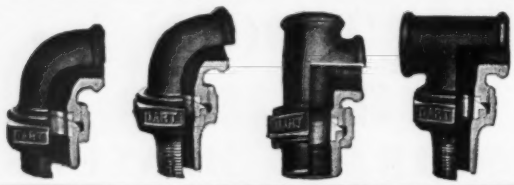
No doubt you have. Chances are they are laying somewhere around your shop. Possibly new tools have replaced the old. These old tools will bring you *dollars* if advertised in the For Sale columns of DOMESTIC ENGINEERING. Some plumber in some other locality may be waiting to obtain these tools, in good condition, at reduced prices. The very low rate of 8 cents per word makes the Classified Page a good buy.

Domestic Engineering
1900 Prairie Ave. CHICAGO



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Have you written for a sample of DART UNIONS, so that you may see the TWO BRONZE SEATS and ground joint? Then, do it at once.

E. M. DART MFG. CO.
Providence, R. I.
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Sales Agents:
The Fairbanks Co.
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ARE YOU GOING TO "CASH IN" ON THIS SUMMER'S HEAT?

Last year—portable showers were in great demand—everyone wanted to "cool off" quickly.

Our new line of *"Milwaukee portables"* is now ready—at prices that *defy competition.* We suggest writing for Bulletin No. 32 mentioning your jobber's name.

MILWAUKEE FLUSH VALVE CO.
MILWAUKEE, WIS.

OVERTON ROOF FLASHINGS—

Extra Heavy or Standard, are built as Roof Flashings should be built. You drop them on the stack and in as quick a time as it takes to tell it, you have finished the job. No extra labor to make them fit. They go on first trial and stay put.

*Order Overtons from your jobber today*

BUTLER MFG. CO.
MINNEAPOLIS, MINN.

NO-SOL COPPER FLOATS

4"x5" Oval Float

No-Sol Floats incorporate all features necessary to the satisfactory performance of a tank float.

*Each float is individually tested and guaranteed.*

INCORPORATED 1907

The AYLING & REICHERT CO.

3047 N. Erie St. Toledo, Ohio

5" Round Float

appropriate talks, the dinner party being further enlivened when Mrs. Koenig, as retiring president, was presented with a beautiful table lamp. There were forty present. Following the banquet, an evening of whist was enjoyed; likewise a number of musical selections, notably the vocal duet by Mr. and Mrs. Victor J. Petersen accompanied on the piano by Mrs. Joseph Deasy, and solos by Mrs. Deasy, likewise an accomplished musician. The five highest scores at whist were: Mrs. Joseph Sand, Mrs. Phillip Tabacco, Joseph Deasy, Joseph Sand and Joseph Di Vecchio. The arrangement committee was headed by Mrs. Sand, assisted by Mrs. Balling and Mrs. Roy Murray.

### NEW OFFICERS INSTALLED IN OGDEN, UTAH

The Women's Auxiliary to the Ogden, Utah Master Plumbers Association met at the home of Mrs. Alma Wharton on January 21. Feeling that with the new year new interests should be found, the members are enthusiastically in favor of working toward a definite goal. After the business meeting the evening was devoted to social matters.

The first meeting in January was held at the home of Mrs. K. Bachman, when new officers were installed. The new president, Mrs. Charles Bishop, spoke on plans for the year. Cards were played during the evening.

## It's a Great Life If Your Endurance Is Good!

*Another complete short story, from the interesting biography of the wife of one of the men in the trade who, as you will find, is doing much to promote her husband's business. This interesting story tells how this clever business woman helps in her husband's office*

THE worst part about our heater sales bubble was the fact that we did not realize that it was a bubble until after it had burst. Everything looked rosy to us, but even so, judging from our experience the previous year, we thought that we were laying our sales plans for the next season on a very conservative basis. We estimated that we would sell at least twice as many heaters as we had sold the year before, and as we did not want to be caught short of stock again, we ordered three carloads, around fifty heaters to a car, well in advance of the season and arranged to have them stored in a warehouse where they would be available for prompt delivery.

The season came on, but the sales failed to materialize as we had expected, though it was apparently through no lack of effort on our part. Promotion work had gone on just the same as the year before and sales efforts had been redoubled. We began to take stock of ourselves and our shortcomings. I, particularly, tried to figure out where I was falling down on the job. People came into the showroom and went out again without buying. Such was not true the year before when I had been successful in selling almost 100 per cent of the showroom prospects.

Careful analysis finally convinced us that it was an outside force, which in our zeal and enthusiasm we had not anticipated, that was working against us. It so happened that the first year we handled these heaters was the first year that they had been on the market. They were at that time more or less of a new idea in heating efficiency and economy and were only put out by the one manufacturer. By the second year, however, other manufacturers were making heaters similar to them and at a cheaper price. Everywhere that stoves were sold one could purchase a heater that would answer the same purpose as the one we had promoted so profitably the past season. (To be continued.)

# Pipe —— Lines
## Connected by LYT

An editor who has his own way of looking at things says that what the machinery of government really needs is a change from banana oil to elbow grease.

*And he adds another thought: One nice thing about the depression is that our friends aren't spending the winter in southern resorts wishing we were there.*

**WITH THE WISE-CRACKERS**

Eddie Cantor says: "A communist is a fellow who has got nothing and is willing to share it with you."

Walter Winchell reports: "A 'Lucy Stoner' is a woman who only uses her husband's name to charge things with."

And O. O. McIntyre tells a story of "two merchants whirling home to the Bronx in the subway, staring silently at the floor, deep in the throes of thoughts about the depression. Presently one relieves himself of an ankle-deep sigh. The other, glancing up at him scornfully, says: "You're telling me?"

**A PERFECT UNDERSTANDING**

*FIRST: "Do you know what I think of married life?"*
*SECOND: "Are you married?"*
*FIRST: "Yes."*
*SECOND: "Yes—I know."*

THE INSERT

**A PUN! A PUN!**

Says the Professor: "Give an example of period furniture."
Answers the bright young student: "I should say an electric chair, because it ends a sentence."

*Every man, it is said, has his price—but a lot of men give themselves away.*

Another witty editor refers to a man who was so mean that he even cheated the undertaker. Just before he died he buried his face in his hands.

*MIKE: "What did her father say when you eloped?"*
*IKE: "Don't come home, and all will be forgiven."*

LEIGHTON'S GLOOM CHASER

**CONFUSION CONFOUNDED**

Confused Shopper: "I want a pair of spec-rimmed hornicles—I mean sporn-rimmed hecticles—dash it! I mean heck-rimmed spornicles—"
Polite Floor-Walker: "I know what you mean, sir. Mr. Brown, show the gentleman a pair of rim-sporned hectacles."

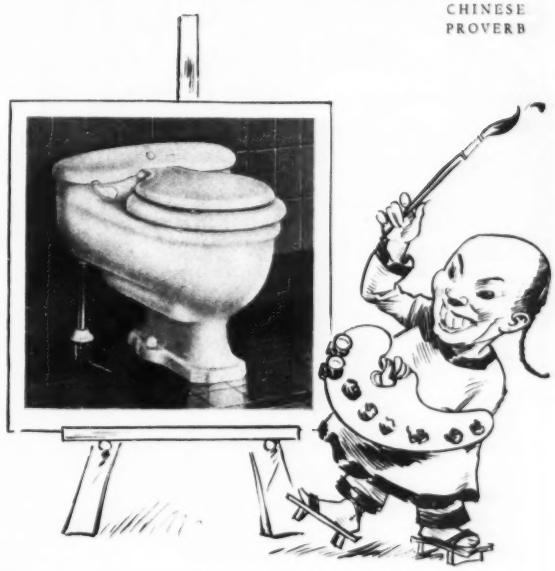
*A bulletin board outside a church announced Sunday's service: "Do you know what **hell is?**" Underneath was printed in smaller letters: "Come in and hear our new organist."*

**TOO FAR GONE**

Two business acquaintances met on the street. Said one: "You're looking blue today. What's troubling you?"
"I'm bankrupt; that's what's the matter."
"Bankrupt, eh? But what did you settle on your wife?"
"Nothing."
"Well, what did you settle on your daughter?"
"Nothing."
"Great Scott, man! You're not bankrupt, you're ruined!"

If a shoe fits a young lady comfortably—she wants one three sizes smaller. LYT


*"One picture is worth a thousand words"*
CHINESE PROVERB



## Use a T/N PHOTO to Sell Replacement Jobs

DARNED clever these Chinee—and it will pay you to snitch a leaf out of their book when you make repair calls.

Take a picture of the T/N along with you. Hand it to the lady of the house, while you're fixing the leaky whatnot.

She'll admire T/N's modern streamline design. She'll appreciate the absence of the usual, bulky, wall-tank. When you tell her about T/N's *extra* quietness and moderate cost, you've got a real prospect. And don't forget to mention T/N's non-overflow feature; its twice-fired vitreous china; its wide range of colors. Get full details from your T/N jobber. Write us for his name.

ONE PIECE WATER CLOSET SILENT NON-OVERFLOW
Patented, Pat. Pend.

W. A. CASE & SON MFG. COMPANY, *Founded 1853*
Dept. 623 220 Delaware Avenue Buffalo, N. Y.

T/N

ONE-PIECE WATER CLOSET

In actual comparison, Fretz-Moon Pipe bends 25% easier than ordinary steel pipe. It also bends freely to any requirement without distortion, flattening at the bend, opening at the weld or scaling of the protecting galvanized coating that insures long service life.

Try Fretz-Moon Pipe for your next installation, regardless of the severe bending required—you'll use it for all steel pipe work after that.

FRETZ-MOON TUBE CO., INC.
BUTLER, PENNA.

FRETZ-MOON
PIPE
*BLACK AND GALVANIZED*

"ACME" has the same meaning in Bibb Washers as the word has in the English language.

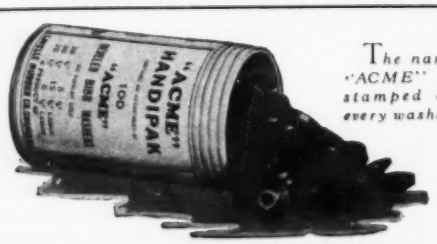
Made of a black rubber compound of extreme strength, ACME Bibb Washers give your customer a world of service, resisting hot or cold water.

They overcome rapping or chattering in faucets and will not swell or become grooved.

ACME Bibb Washers come enclosed in a screw top can, 100 assorted Bibb washers in seven sizes.

*See ACME Bibb Washers in Catalog "F", our Twentieth Anniversary Catalog. Ask your jobber if you do not now have a copy.*

**Lavelle Rubber Co., 320 W. Illinois St., Chicago**




*The name "ACME" is stamped on every washer.*


# Bath a Day Movement

THINGS must be happening in Astoria, Oregon. A wire from Arne Abrahamson of that city asked that fifty copies of "The Story of the Bath" be rushed to him immediately.

No report is available as yet concerning the use to which he will put these booklets. It is probable, from the number ordered, that they will be distributed at a meeting of one of the local service clubs—Rotary, Kiwanis, etc.

This has been a very popular use of the booklet in the last two years, although there is still interest, of course, in the distribution of copies to school children.

We have prepared a Twenty-Minute program for the use of master plumbers before their local service clubs. This program will be sent to any reader of "Domestic Engineering" without charge, together with a complimentary copy of "The Story of the Bath." The program will be found to be a very complete merchandising story. Write for your copy today.

# Little Sentences That Sell

**Write one of these BLACKBOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.**

He who has nothing to do has no business to exist.

* * *

The duelist's aim is at the point of honor.

* * *

Faults are the misfits of the intellect.

* * *

The man who is never idle has no time to be mean.

* * *

Chess players are not the only ones who move once a year.

* * *

The gardener's occupation is certainly a seedy one.

* * *

Getting rich is one way to remove stains from the character.

* * *

Water on the brain can sometimes be avoided by using umbrellas.

* * *

The bore never leaves a hole in the memory of his victim.

* * *

Many a man doesn't fail because he doesn't try.

* * *

Men applaud your good judgment every time you agree with them.

* * *

Wigs, according to the language of flowers, must be lie-locks.

---

**Hartford, Conn.**—Airnoil Burners, Inc., has established offices at 1333 Main street to deal in oil burning equipment. H. F. Lovell, Glastonbury, is president, and William Earle of Hartford, vice president.

**Bridgeport, Conn.**—Heat, Inc., has been chartered under Connecticut laws to deal in heating equipment, with an authorized capital of $50,000. The incorporators are: Noble E. Vincent, Frank H. Mercer and Mary E. Kraoutski.

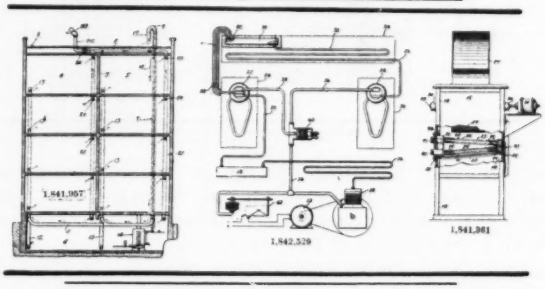
**Rapid City, S. Dak.**—Peter Mellgren has opened a plumbing and heating business at 1315 Eighth street. He was formerly with the Duhamel Co. in its plumbing department.

# PATENTS

## Heating Department

1,841,957. Ventilating and Heating System. Edward P. Kelly, Brooklyn, N. Y.

1,842,529. Refrigerating Apparatus. David E. Maccabee, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a corporation of Delaware.



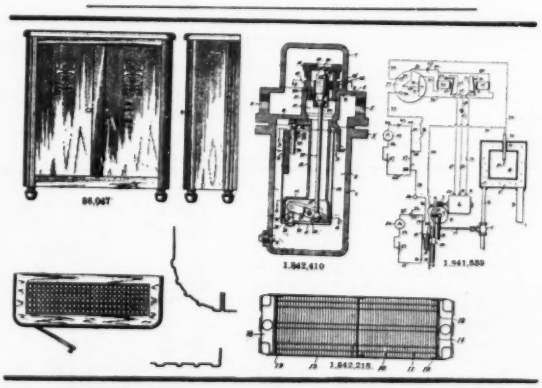
1,841,361. Air Heater and Method of Making the Same. Claude A. Bulkeley, Kenmore, N. Y., assignor to Niagara Blower Company, Buffalo, N. Y., a Corporation of New York.

86,047. The Ornamental Design for a Combined Humidifier and Radiator Cover. Charles A. Olson, Geneva, Ill., assignor to Crane Co., Chicago, Ill., a Corporation of Illinois.

1,842,410. Steam Trap. Wilfred H. Kuhn, Detroit, Mich.

1,841,559. Automatic Temperature Control Device. Fritz Frederick Uehling, Passaic, N. J.

1,842,218. Radiator. Reuben N. Trane, La Crosse, Wis.



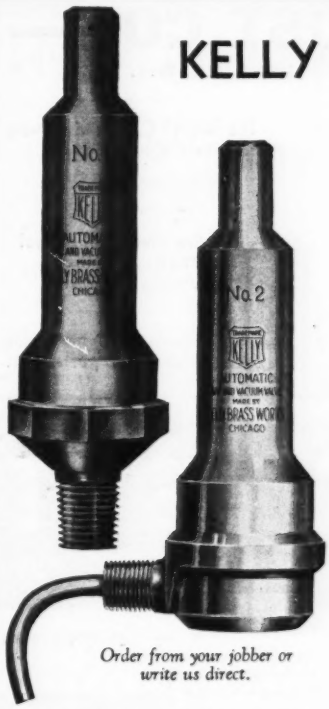
18,335. Unit Heating and Ventilating Apparatus. Herman C. Davis and Lewis D. Harnett, Columbus, Ohio, assignors, by mesne assignments, to Buckeye Blower Company, a Corporation of Delaware.

1,842,357. Domestic Refrigerating Mechanism. Walter W. Williams, Bloomington, Ill., assignor to Williams Oil-O-Matic Heating Corporation, Bloomington, Ill. a Corporation of Illinois.

1,842,489. Humidifier and the Like. Nellie H. Partridge, Chicago, Ill.

1,838,242. Pipe Covering. James M. Wilson, Louisville, Ky., assignor, by mesne assignments, to Reynolds Metals Company, Louisville, Ky., a corporation of Delaware.


KELLY VALVES



The complete line of seven Kelly Valves will fill every air valve requirement for a gravity one-pipe atmospheric or vacuum type heating system.

All Kelly Valves are so constructed that they need no adjustment and they cannot be tampered with. They are guaranteed for five years.

Operate under all pressures up to 10 pounds. Made of the highest quality materials and by skilled workmen, they will do a complete job of satisfying customers and saving fuel.

*Order from your jobber or write us direct.*

KELLY BRASS WORKS
226-32 W. ONTARIO ST. CHICAGO

Patterson
Hot Water Heaters in California

Illustration shows the Hollywood branch of the Security-First National Bank of Los Angeles, which is equipped with a Patterson Hot Water Heater.

The architects for this fine structure were Meyer & Holler, the consulting engineers, Holmes & Sanborn, and the heating contractors, The Lakin Co.

Wherever you go, you will find the outstanding buildings depend upon Patterson Heaters for hot water.

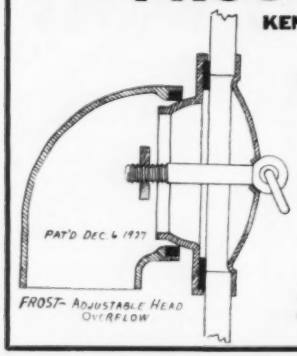
Patterson Heaters are made with a heaping measure of quality and sold at the lowest possible price, quality considered. Over half a century of experience is back of Patterson Heaters.

May we send you further particulars?

THE PATTERSON-KELLEY CO.
106 E. 40th Street New York, N. Y.

**—FROST CO.—**

KENOSHA, WIS.




The FROST C. W. and O. with the Adjustable Head

Fills a Long Felt Want

Another Illustration of Real Quality Without Additional Cost

*Ask for FROST products and be sure you get them.*

**BARRETT**

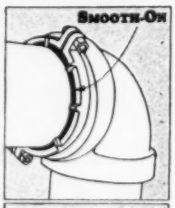
PLUMBER'S *Rough* BRASS *Goods*

*The Standard* — *Compression Stops* — *Compression Stops and Wastes* — *Ground Key Line* — *Waterworks Brass Goods* — *of Comparison*

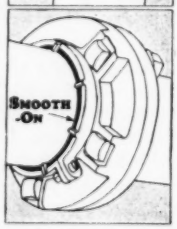
THE CLEVELAND BRASS MANUFACTURING COMPANY
4606-4700 HAMILTON AVENUE CLEVELAND, OHIO

**Stop pipe thread leaks with SMOOTH-ON No.1 in a SMOOTH-ON CLAMP**

**Sizes for 1-in. to 12-in. pipe**

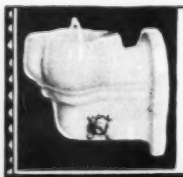



QUICK, easy, cheap and dependable. Holds for the life of the line—steam, hot or cold water, gas etc., any pressure, any temperature, iron, brass, or copper pipe. No interference with bolt heads or nuts of flanged joints. Get Smooth-On Clamps and Smooth-On No. 1 from nearest supply house or from us.



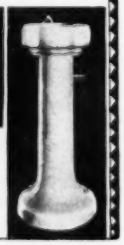

*Write for the free Smooth-On Handbook.*

SMOOTH-ON MFG. CO.
Dept. 12, 574 Communipaw Ave.
Jersey City, N. J.



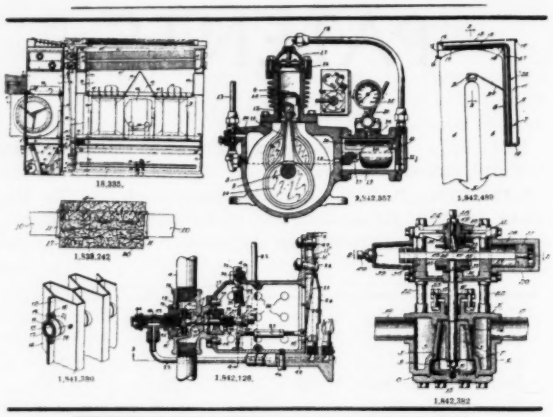
The Choice of Plumbing Contractors Who Play Safe, for schools, office buildings, etc.

**HALSEY TAYLOR**
*DRINKING FOUNTAINS*



*Two stream projector and practical automatic stream control*

THE HALSEY W. TAYLOR CO., WARREN, O.

1,841,380. Radiator. George H. Phelps, Warehouse Point, Conn., and Irving T. Bennett, Brooklyn, N. Y., assignors to Murray Management Corporation, Brooklyn, N. Y.; a Corporation of New York.

1,842,126. Fluid Fuel Control System. Wallace J. Snow, Lakewood, Ohio, assignor, by mesne assignments, to The Cleveland Heater Company, Cleveland, Ohio, a Corporation of Ohio.

1,842,382. Power Operated Valve. Fred C. Arey, Oak Park, Ill., assignor to Vulcan Soot Cleaner Company, Du Bois, Pa., a corporation of New Jersey.

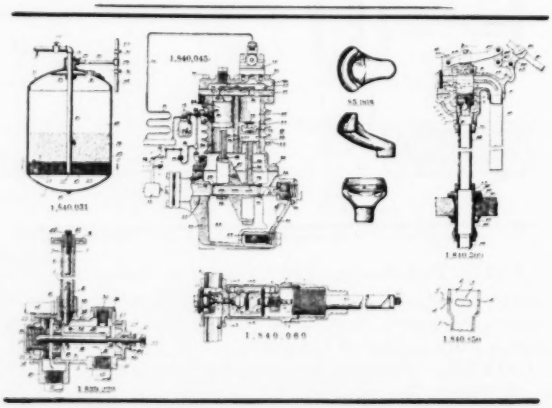
## Plumbing Department

1,840,031. Water Softening Apparatus. Walter H. Green, Chicago, Ill., assignor, by mesne assignments, to The Permutit Company, New York, N. Y., a Corporation of Delaware.

1,840,045. Pump for Refrigerating Apparatus. Alex A. McCormack, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware.

85,968. The Ornamental Design of a Drinking Fountain Bubbler Head. Roy H. Zinkil, Oak Park, assignor to Crane Co., Chicago, Ill., a Corporation of Illinois.

1,840,309. Ball Cock. Andrew F. Curtin, Medford, Mass.



1,839,229. Thermostatic Valve. John H. Kolts, Crafton, Pa., assignor to Pittsburg Water Heater Company, Pittsburgh, Pa., a Corporation of New Jersey.

1,840,060. Thermostatic Valve. Wallace J. Snow, Lakewood, Ohio, assignor to The Cleveland Heater Company, Cleveland, Ohio, a Corporation of Ohio.

1,840,850. Rain Water Pipe. Nishi Kanta Sarkar, Calcutta, India.

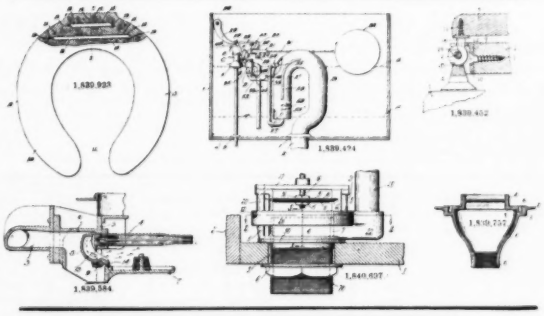
1,839,923. Toilet Seat. Howard Clifford Leslie, Milton, Mass., assignor to B R E Manufacturing Co., Hyde Park, Mass., a Corporation of Massachusetts.

1,839,424. Flush Tank Apparatus. Daniel F. Tracey, Huntington, W. Va.

1,839,452. Hinge. Clifton E. Thompson, Kalamazoo, Mich.

1,839,584. Burner Structure. Clarence B. Overly, Detroit, Mich., assignor, by mesne assignments, to Clayton & Lambert Manufacturing Company, Detroit, Mich., a Corporation of Delaware.

1,840,697. Outlet Valve for Water-Closet Tanks. Alexander A. Carson, Braintree, Mass.

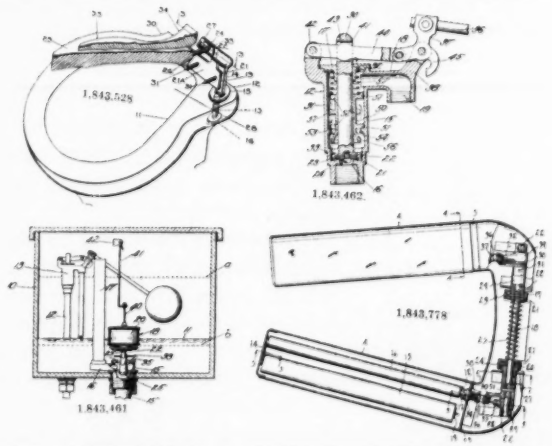


1,839,757. Drain Outlet. Lewis W. Harrington, New York, N. Y.

1,843,528. Hinge for Water Closet Seats and Covers. Dudley S. Warth, Rye, N. Y., assignor to C. F. Church Manufacturing Co., Chicopee, Mass., a corporation of Massachusetts.

1,843,461. Valve. William Scott, Medford, Mass.

1,843,462. Valve. William Scott, Medford, Mass.



1,843,778. Toilet Seat. Archibald I. McColl, Kalamazoo, Mich.

1,842,715. Flushing Device. William J. Collison, Bakersfield, Calif.

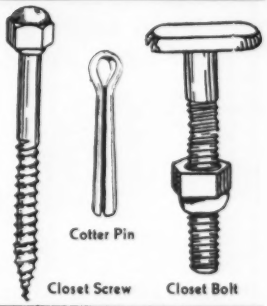
1,842,166. Device for Removing Obstructions from Drain Pipes and for Like Purposes. Thomas G. Haines, Dayton, Ohio.

1,842,289. Combination Sink and Tub. John W. Russel, Columbia, Pa.


HINDLEY'S is the complete line of Plumbers' Specialties.

See this line, fully described on Page 851 of Domestic Engineering Plumbing & Heating Catalog. Then take quick action.

HINDLEY MFG. CO.
VALLEY FALLS, R. I.




HINDLEY PLUMBERS' SPECIALTIES

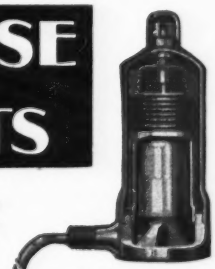
INCREASE YOUR PROFITS

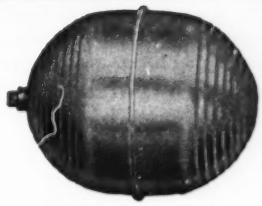
*There's a good margin for you*
*And satisfied customers too!*

Sell Dole Air & Vacuum Valves

*Write for full information.*

THE DOLE VALVE COMPANY 1913 Carroll Ave., Chicago



Toledo Solderless Floats

We are constantly hearing of Toledo Solderless Floats that have been standing up against the most severe water conditions and giving unsurpassed performance. The reason? **All Copper and no solder.**

*Order Toledos from your jobber.*

THE REICHERT FLOAT & MFG. CO.
2238 Smead Ave. Toledo, Ohio

STEEL
IRON
CHALLENGE NIPPLES
BRASS
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free sample

Send for one today. Compare it with any other. Point for point. Then you will know what's in a name and why you should buy Challenge at no greater cost.

FRICK-REID SUPPLY CORP.
NIPPLE DIVISION
117 Sandusky St., N. S. Pittsburgh, Pa.

There is no surer way
to make a pipe wrench
safe and strong than to
make it all steel
*like* **TRIMO**

. . years of experience
dictated the design

. . common sense dictated all steel construction

*Made by the world's leading makers of pipe tools*
**TRIMONT MFG. CO., Roxbury (Boston), Mass.**

NEW LOW PRICES
SPENCER
*MAGAZINE FEED BOILERS*

The cost of a Spencer Magazine Feed Boiler and one year's supply of Buckwheat Anthracite is now the same as the cost of an ordinary flat-grate boiler and one year's supply of large size Anthracite. The many exclusive Spencer advantages cost your customers nothing extra, but you make more money.

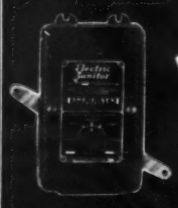
*Write us for full details of the Spencer plan and how it will build profitable sales for you*

SPENCER HEATER COMPANY, WILLIAMSPORT, PA.
Spencer Heater Co. of Canada, Ltd., Toronto, Ontario

**As you gain new business and the confidence of your customers by installing welded pipe systems, permanently leak-free, you will develop increasing confidence in Airco Oxygen if you give it a trial.**

**Its uniform quality and availability in any quantity should interest you if you are welding. If you are not, we shall be glad to explain how to gain customers, more business and even cut your overhead thru its use.**

**Air Reduction Sales Co.**
**Lincoln Bldg., E. 42nd St., New York City**



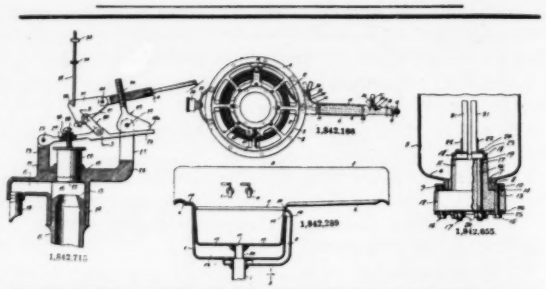
The Electric Janitor
FULLY ELECTRIC
MOTOR-DRIVEN

Limit Controls Available

TRADE PRICE
$24.50

Consumer Price
$49.00
Plus Installation

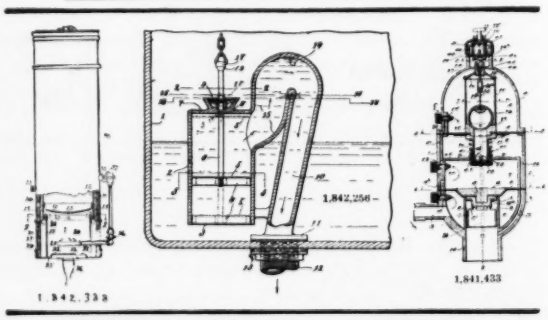
Product of TIME-O-STAT CONTROLS
Division of Minneapolis-Honeywell Regulator Company
ELKHART, IND. and MINNEAPOLIS, MINN.



1,842,655. Electric Heating Unit for Tanks. Sidney J. Bush, Los Angeles, Calif.

1,842,388. Hot Water Boiler. Theodore W. Dahlquist, Dedham, Mass.

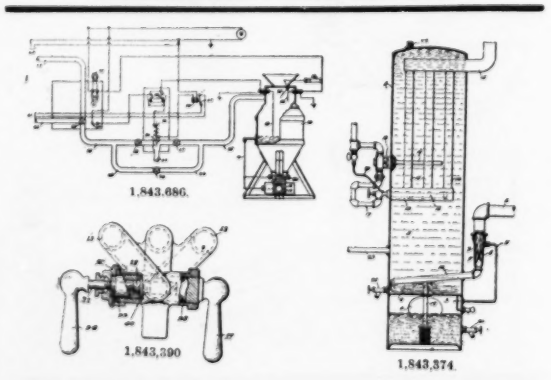
1,842,256. Siphon Valve. James Leslie Embly, Waynesboro, Pa., assignor of one-half to H. H. Shockey, Waynesboro, Pa.



1,841,433. Flush Valve. John L. Finnegan, Nashville, Tenn.

1,843,686. Sewage Ejector. Frank J. Koch, Newark, N. J.

1,843,390. Mixing Valve. William E. Foster, New Bedford, Mass.



1,843,374. Water Softener. Eli W. Shawen and Albert C. Arnett, Dayton, Ohio.

1,844,287. Solder. Henry Edward Kehder, Huey, Ill., assignor of one-half to Edward Mat Pelzer, St. Louis, Mo. A solder composed of 67 per cent by weight of bar tin, 4.2 per cent by weight of nigrosin, 4.2 per cent by weight of yellow dextrin, 8.7 per cent by weight of extract of logwood and 15.9 per cent by weight of soldering paste.

# CLASSIFIED ADVERTISING

**8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion.**

**One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance of publication date.**

## Situations Open

SALESMEN—MANUFACTURER WITH Complete Line of Boilers, Furnaces, Radiation and Water Heaters has few open territories in Central West. Excellent earnings for producers. Address Key 709, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

REPRESENTATIVES WANTED IN leading cities to handle highest grade line of radiator shields and radiator cabinets. Our representatives earn $500.00 to $1,000.00 per month the year around, above expenses. Full selling plan furnished. Address Key 256, "Domestic Engineering," 1900 Prairie Ave., Chicago.

JOBBERS AND SALES AGENTS should communicate with us re: A money-making proposition now available. Write us today. Address Koil-Les Heater Company, Geneva, Illinois.

DISTRICT SALES REPRESENTATIVE. Several desirable territories now open to represent well-known line of Electric Pumps and Water Systems. Only high type salesmen need apply. References required. Write at once. Address Key 706, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## Situations Wanted

HEATING ENGINEER THOROUGHLY conversant with all systems of Steam and Hot Water Heating, desires position of salesman, estimator or office manager with progressive heating company. Address Key 720, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## Representatives Wanted

**SALES REPRESENTATIVES**
**BRANCH MANAGERS**
**SALESMEN**

**who are thoroughly experienced in the sale of steam and hot water heating equipment, who have outstanding sales records and who are interested at this time in a lucrative sales opportunity such as does not usually exist, should write for further information. Give full particulars concerning experience, past connections and sales. Present members of organization are aware of this ad and all inquiries will be treated confidentially. Address P. O. Box 1222, Pittsburgh, Pa.**

SALES REPRESENTATIVE WANTED. Liberal commission basis on a high grade plumbing fixture, nationally known. Territory open in northern part of New York State; also Washington and Baltimore. Want men experienced in sales promotion among Architects, Jobbers and Plumbers. No objection to carrying one other line. Address Key 722, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## Wanted To Buy

WILL PURCHASE PLUMBING AND heating business or form partnership in going concern. Address F. W. Nelson, P. O. Box 107, Temiskaming, Quebec, Canada.

## For Sale

FOR SALE—OLDEST ESTABLISHED plumbing and heating business in city of ten thousand. Address Key 723, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

FOR SALE—PATENT ON AUTOMATIC motorless condensation and vacuum pump for steam or vapor systems. Low manufacturing cost. Address Key 719, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## Lines to Handle

MANUFACTURER OF NATIONALLY advertised line of drainage specialties has a number of desirable territories open for high grade, experienced, drainage salesmen. Attractive commissions and complete territory protection. Norman Boosey Mfg. Company, 5140 Hamilton Avenue, Detroit, Michigan.

MANUFACTURERS' AGENTS WANTED in Cleveland, Chicago, St. Louis, Dallas, New Orleans, Atlanta, Jacksonville and Richmond to handle complete line of Pipe Nipples, on a commission basis. Give full details in first letter. Address Key 718, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

*Use this page to get what you want*

If you are looking for competent employes; or if you contemplate a change in position, have a patent for sale; wish to purchase or sell a plumbing and heating business; second-hand machinery or tools; form a co-partnership, etc., your advertisement on this page will put you in touch with the people you desire to reach.

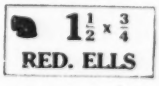
The cost of insertion is only eight cents a word and may mean many dollars to you.

## Lines Wanted

REPRESENTATIVE OF NATIONAL manufacturer for many years on Pacific Coast calling on wholesale jobbers, open for lines in this territory, of enamelware, vitreous, brass, pipe, fittings and heating material. Address Key 721, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

## Miscellaneous

**PLUMBERS' BIN LABELS**




**Send for samples and prices of card holders, bin labels and stop valve tags.**

**You can order through your local jobber or plumbing supply house.**

**Haddon Bin Label Co., Haddon Heights, N. J.**

The Most Reliable
PIPE COUPLING BUYERS
In The Country
*Write us for cash prices*
CAPITOL MFG. & SUPPLY CO.
550 Nicholas Street, Columbus, Ohio

**Audel's Plumbers' Guide**

**The standard educator; teaches the theory and practice of plumbing, heating, steamfitting, gasfitting and sheet metal work. Answers your questions. Explains the new short cuts, modern methods and inside trade information. Easy to understand. A complete reference and home study course. Fully illustrated, authentic, up-to-date, with plumbers code. Four volumes, pocket size; price $6 complete, payable $1 a month. Write today for FREE Plumbers Folder. THEO. AUDEL & CO., 65 W. 23rd St., New York.**

## Books for Your Trade Library

DEAN'S SYSTEM OF GREENHOUSE HEATING. By Mark Dean. Explains in detail Mr. Dean's system of heating greenhouses with steam or hot water. Glass surface, sizes of flow and return pipes, radiating surface of pipes, etc., are all taken into consideration. This book will be a great help to anyone who plans or installs greenhouse heating systems. Many tables are given. 46 pages, 5¼x7¾, cloth cover. Price postpaid $2.00.

101 PLUMBING AND HEATING TABLES. The book contains as complete a set of working tables as has ever been published. It answers quickly and accurately, practically every kind of plumbing and heating question which could possibly be answered by a table, rule or chart. Is well indexed. Has 48 pages. Size 8x11, bound in cloth. Price postpaid $1.00.

DOMESTIC ENGINEERING
*Books Sent Parcel Post Prepaid*
1900 PRAIRIE AVENUE, CHICAGO

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# WOLVERINE

## COMPLETE-DEPENDABLE
## •THE WOLVERINE LINE•

MASTER PLUMBERS favor Wolverine Brass Goods and Specialties.

In the Wolverine line they find what they need — plus the assurance that any Wolverine item will uphold the honesty of their own workmanship.

Exhaustive and intelligent study of Master Plumbers requirements has made the Wolverine line complete.

The Policy of the Wolverine Brass works has made these products dependable.

**WOLVERINE BRASS WORKS**

GRAND RAPIDS WB MICHIGAN

# I *found a* Million Dollar Lady

## in my plumbing and heating store

THIS, we are told, is a true story. Chances are something like it has happened to you. Even if it hasn't, it's a good thing for you as a retail merchant to think about.

It happened to a local plumbing dealer in just an average sized city. He didn't have the biggest shop in town but it was clean as a pin-head. He always kept a nice display in his small window. Waited on people quickly. Knew his stock and could tell a customer *why* he recommended this fixture or that heating system.

One day last Fall a little old lady opened the door. Her clothes looked as though they had been found in an old attic. You know, the kind they wore in 1890. The plumbing dealer wasn't sure, but thought she might be begging. She looked so old-fashioned—so poor.

But he gave her a cheerful welcome to his store and asked what he could do for her.

MUCH to his surprise, this poor looking little old lady wanted to buy a toilet seat. Now, the natural thing to do was to show her the cheapest seat in the store. *But this plumber didn't!* He picked up a Church Seat and started telling her about it.

Said he imagined she wanted the best—a Church Seat. That he had some others that *looked like* a genuine Church Seat but there was no substitute for a real *sheet-covered* Church Seat.

She wanted to know *why* Church Seats were different—what he meant by *sheet-covered*—and he told her. He explained that some white toilet seats were just painted white or that the white film was sprayed on. Then he told her how Church Seats were made. How every Church Seat was covered with *an actual* sheeting, so thick and tough that it couldn't crack or chip or peel off like paint will do.

Think of it—all this sales talk, all these *facts about Church Seats* just to sell a poor looking little old lady a toilet seat. And would you believe it, she bought the Church Seat. Now here's the real eye-opener.

TWO months later that poor looking little old lady opened the front door once more. This time she was with a young woman in a costly fur coat. Outside a big Cadillac car was waiting with a liveried chauffeur at the wheel.

And here's what the plumbing dealer heard.

"My grandmother, Mrs. Morton, tells me you are a good, honest plumber. She bought a toilet seat from you not long ago. She appreciated your good advice. *You know your business.* You told her *why* Church Seats were better.

"Now she is building an orphanage. You've probably heard about it, and she wants you to have the plumbing contract. We just came in to tell you."

Mrs. Morton! So that poor looking little old lady was *the* Mrs. Morton—one of the richest women in town.

* * * *

IT just goes to show that you never can tell; that it always pays to *sell the best* and to know *why* Church Seats are better. Every Church Seat is *sheet-covered*. Don't forget to mention it—to explain it to your customers. There's a Mrs. Morton in every town. C. F. Church Manufacturing Company, Holyoke, Mass.